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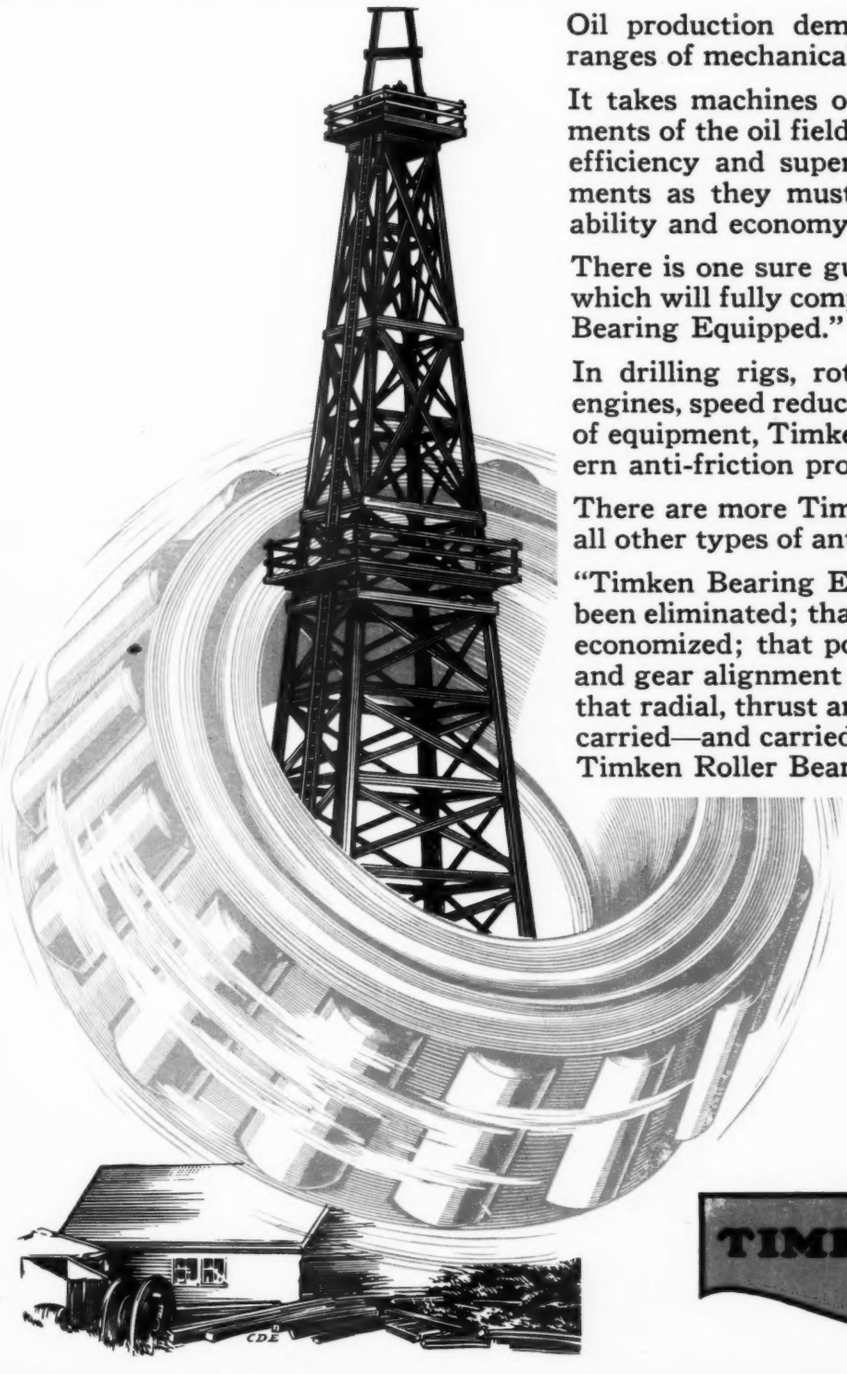

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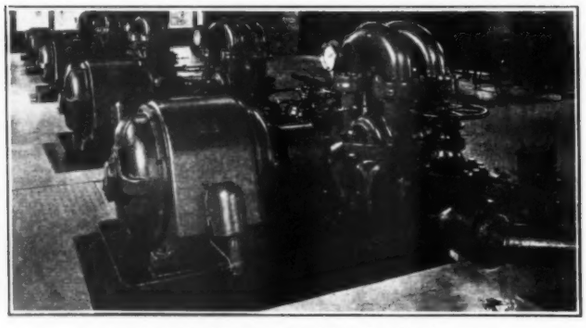

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More Crude Price Cuts May Be Expected

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Major Purchasers Will Meet All Reductions of Smaller Companies Wherever and Whenever They Affect Market

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

By Andrew M. Rowley

Whether crude oil price reductions announced last week by major purchasers in different sections of Texas would spread to Oklahoma and Kansas and other sections of the Mid-Continent area seems to be the question uppermost in the minds of both producers and refiners. In view of the new policy inaugurated in the industry to eliminate all price cutting through the simple expedient of meeting all cuts, it is not hard to answer the question regarding further crude oil price reductions. Posted schedules of the major purchasers will be reduced whenever and wherever there is a sufficient quantity of crude oil moving to market under the prices posted for the whole area to have an influence on the gasoline market situation.

It is estimated at this time there is approximately 20,000 barrels of Oklahoma crude, produced outside of the Oklahoma City Field, which is being sold daily under the regularly posted market prices. That crude is being refined and the gasoline and other products are being sold at prices which have weakened further the general refined oil market in those areas. The effect of weakened gasoline prices is felt over a wider territory than the effect of lower prices for the crude from which that gasoline is made. It is to be expected the major crude oil purchasers will reduce their posted schedules in all sections affected by crude oil price cutting and also by low gasoline prices resulting from crude price cutting.

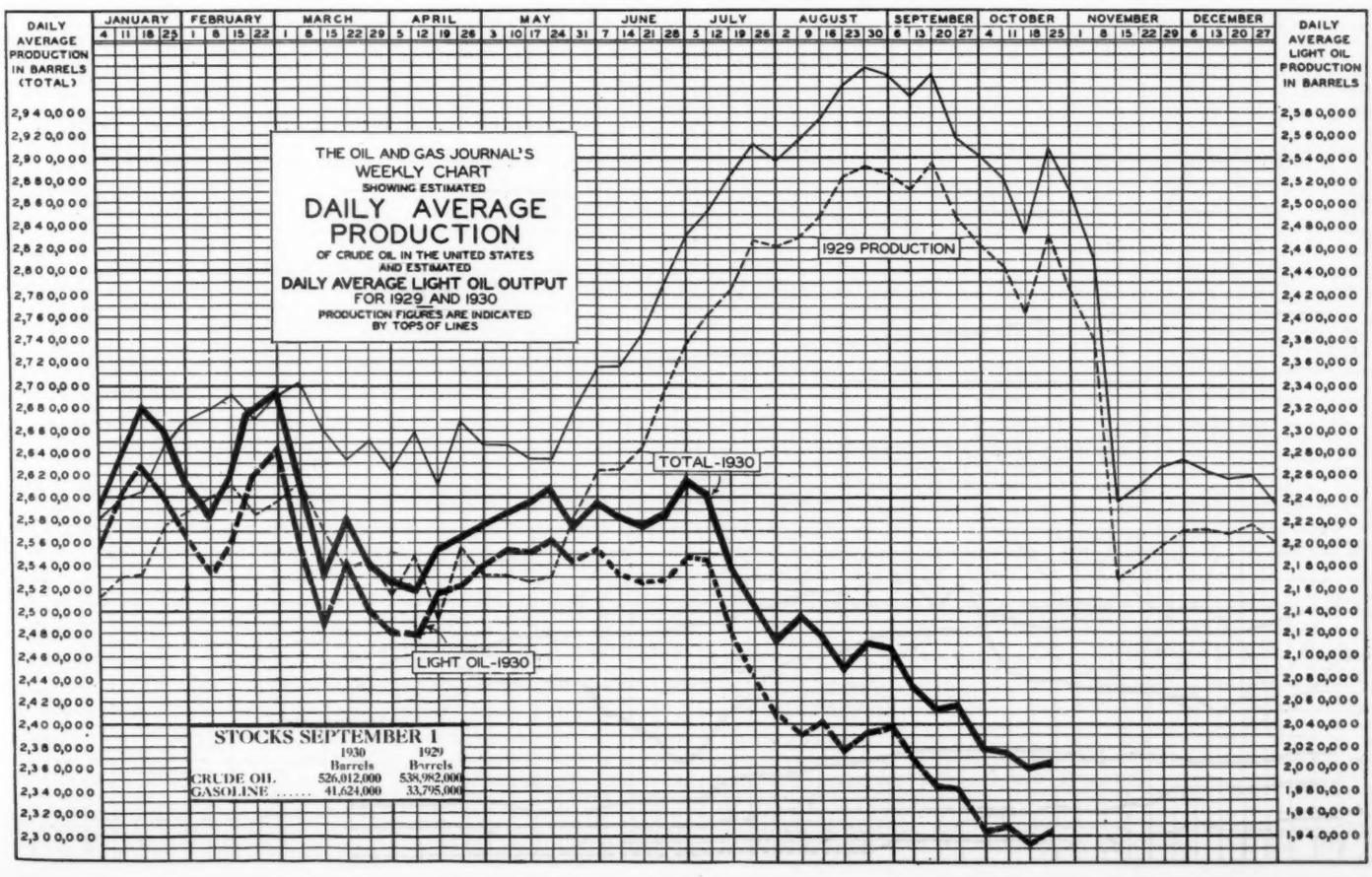
The industry might as well realize now as later that one price level will mark the movement of crude oil in each area and that the same policy will obtain in the refined oil market. In other words reductions in the regularly posted crude oil price schedules and in the tank wagon scales in the refined market will be made to meet all price cuts which have any appreciable effect upon the market. It is understood the major companies are prepared to cut prices to as low a point as is necessary to permit the movement of all oil in each section to market at one price level. Such a policy is the only one possible under good business practice.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended October 18, and a comparison with the previous week follows:

	Oct. 18		Oct. 11	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	87,985	.....	92,285	.....
St. Louis-Pearson	23,640	.....	24,970	.....
Seminole	148,335	.....	142,390	.....
Northern miscellaneous	224,635	.....	229,615	.....
Southern fields	59,915	.....	59,385	.....
Total Oklahoma	544,510	.....	548,645	.....
West Texas—				
Hendricks	61,585	.....	61,085	.....
Yates	107,480	.....	107,480	.....
Remainder	113,900	.....	104,224	.....
Total West Texas	282,965	.....	272,789	.....
North Louisiana	36,810	5,360	35,030	5,245
Arkansas	16,465	36,375	15,995	36,410
North Central Texas	108,285	.....	106,474	.....
Texas Panhandle	80,236	.....	79,300	.....
East Central Texas	42.199	.....	43.311	.....
Kansas	112,615	.....	115,620	.....
Total Mid-Continent area	1,224,085	41,735	1,217,164	41,655
Gulf Coast	.....	186,854	.....	190,031
Southwest Texas	.....	105,875	.....	106,857
Eastern	113,000	.....	114,000	.....
Rocky Mountain area	108,012	.....	100,950	.....
California—				
Santa Fe Springs	94,500	.....	95,250	.....
Long Beach	101,000	.....	101,250	.....
Playa Del Rey	23,500	.....	20,500	.....
Elwood	32,500	.....	34,000	.....
Ventura Avenue	47,000	.....	46,500	.....
Kettleman Hills	24,000	.....	25,500	.....
Remainder of State	179,500	87,000	180,000	88,000
Total California	502,000	87,000	503,000	88,000
Total United States	1,947,097	421,464	1,935,114	426,543
Grand total	2,368,561		2,361,657	

Total Increase 6,904 Bbls.; Light Oil Increase 11,983 Bbls.



Possible Crude Cut Already Discounted

Refinery Prices Now About as Low as They Will Go. Natural Gasoline, Neutrals and Cylinder Stocks Weaker

By W. T. Ziegenhain

The Oklahoma refinery market passed through another week of uncertainty which encouraged price shading on practically all commodities and led the general market to a new low since 1916. Further weakness developed in the natural gasoline prcies also. The unsettled position of the market is partly accounted for by the posting of lower prices on crude oil in various sections of the Mid-Continent which many believe will inevitably lead to a general reduction throughout the Mid-Continent.

While this factor tends to depress the market, the disappointing demand for gasoline which came so abruptly in the latter part of September and has extended into October with no indication of changing, has been the greater cause for refiners to dump excess stocks. Their one hope seems to be to enter the winter with only a working margin of stocks.

Effect of Crude Cuts

It is not thought that gasoline prices will be materially affected should a general crude reduction materialize for the possibility of a crude reduction has been pending so long its effect has already been discounted. During the past week lower crude prices were posted by principal buyers in North Texas fields and almost daily there is a report of lower prices being posted by small purchasers throughout Oklahoma. At present the combined purchases of these smaller companies represents but a small portion of the total crude produced but more and more pressure is sure to be brought by Oklahoma refiners who are forced to buy Oklahoma crude at the posted price in competition with North Texas refiners who are buying Texas crudes of similar refining value at an average of 25 cents a barrel lower.

REFINED MARKET BAROMETER

The uncertainty of the trend of future crude oil prices in the Mid-Continent and the eagerness of refiners throughout the country to hold gasoline stocks to a minimum despite a diminishing demand, caused new low prices to be posted throughout the Mid-Continent and in the Chicago area with further weakness apparent in the Gulf Coast market. Natural gasolines were also reduced in the Mid-Continent but the California market was slightly stronger. Fuel oils moved more freely but no price advances seem likely, due to the railroads and industrial consumers ordering out the minimum on their contracts. Neutrals and cylinder stocks, including bright stocks, were also sold at reduced quotations both in the Mid-Continent and in Pennsylvania. Wax remained unchanged.

Mid-Continent—New low prices on gasoline originating in West Texas and North Texas points caused Mid-Continent refiners to further reduce their prices, but the quantity moving was not encouraging. Natural gasoline prices were reduced one-half cent with another slight reduction expected. Distillates offered the only bit of encouragement. They were being actively traded but at last week's price level. Fuel oils remained unchanged. Neutrals and cylinder stocks were reduced in price early in the week.

Atlantic Seaboard—Prices were generally unchanged and the bottom of the refined oil market was thought to have been reached.

California—Slightly higher prices on natural gasoline, kerosene and fuel oils marked the California area as the only one offering encouragement to the general market.

Gulf Coast—No price changes were made in the Gulf Coast market but all commodities were freely offered, with fuel oil especially weak.

Pennsylvania—Fractional reductions in a few grades of neutrals and slightly lower prices on wax were the only changes made in the Pennsylvania market.

Chicago—Distillates moved at a much greater volume but the balance of the market remained dull. New low quotations from Texas points helped to depress the local market.

Unfortunately, cheaper crude stimulates the desire to maintain crude runs and to increase them as long as the products can be moved. Mid-Continent refinery runs have not been reduced in proportion to the lesser seasonal demand for refinery products and the future trend of prices could continue downward.

It is interesting to note that with U. S. Motor gasoline selling at 5 cents as is being quoted by several Oklahoma refiners for resale and in some cases, to the trade direct, the refiner receives only about 1¼ cents per gallon more for the gasoline than what he pays for the crude delivered to his plant. It is not reasonable that the average refiner can manufacture gasoline with this small margin and expect the revenue from gasoline to equalize the lesser revenue received from kerosene, gas oil, fuel oil, etc., and in addition, pay for the cost of refining the crude.

Thus, if cost is taken as a factor in viewing the future of the gasoline market it is reasonable to believe a crude reduction will have little effect on the market, but if costs continue to be ignored, the future of the market remains as obscure as ever.

Gasoline Quotations

U. S. Motor gasoline continued to be quoted over a wide range of prices. The general market quotations were maintained between 6 to 6¼ cents but material was freely offered throughout the week at 5 to 5¼ cents. North Texas, West Texas and Chicago refiners quoted prices on gasoline for delivery into the northern market at prices which would net the Oklahoma refinery less than 5 cents in many instances. As an example, U. S. Motor gasoline is being delivered into Chicago from West Texas plants equivalent to 4.68 cents Oklahoma.

Some improvement is expected in the movement of the lower endpoint grades in the immediate future due to colder weather but jobbers are adopting the same "watchful and waiting" tactics in ordering this grade of material they have followed in all of their recent inquiries.

Kerosene

Slightly lower quotations were posted on kerosene at the close of the week but the 41-43 grade, passing a good burning test, witnessed a better moving market than gasoline. This material was generally traded at 3⅛ to 3¼ cents while the kerosene, not passing a burning test, was available at 3 cents.

Natural Gasoline

Prices on all grades of natural gaso-

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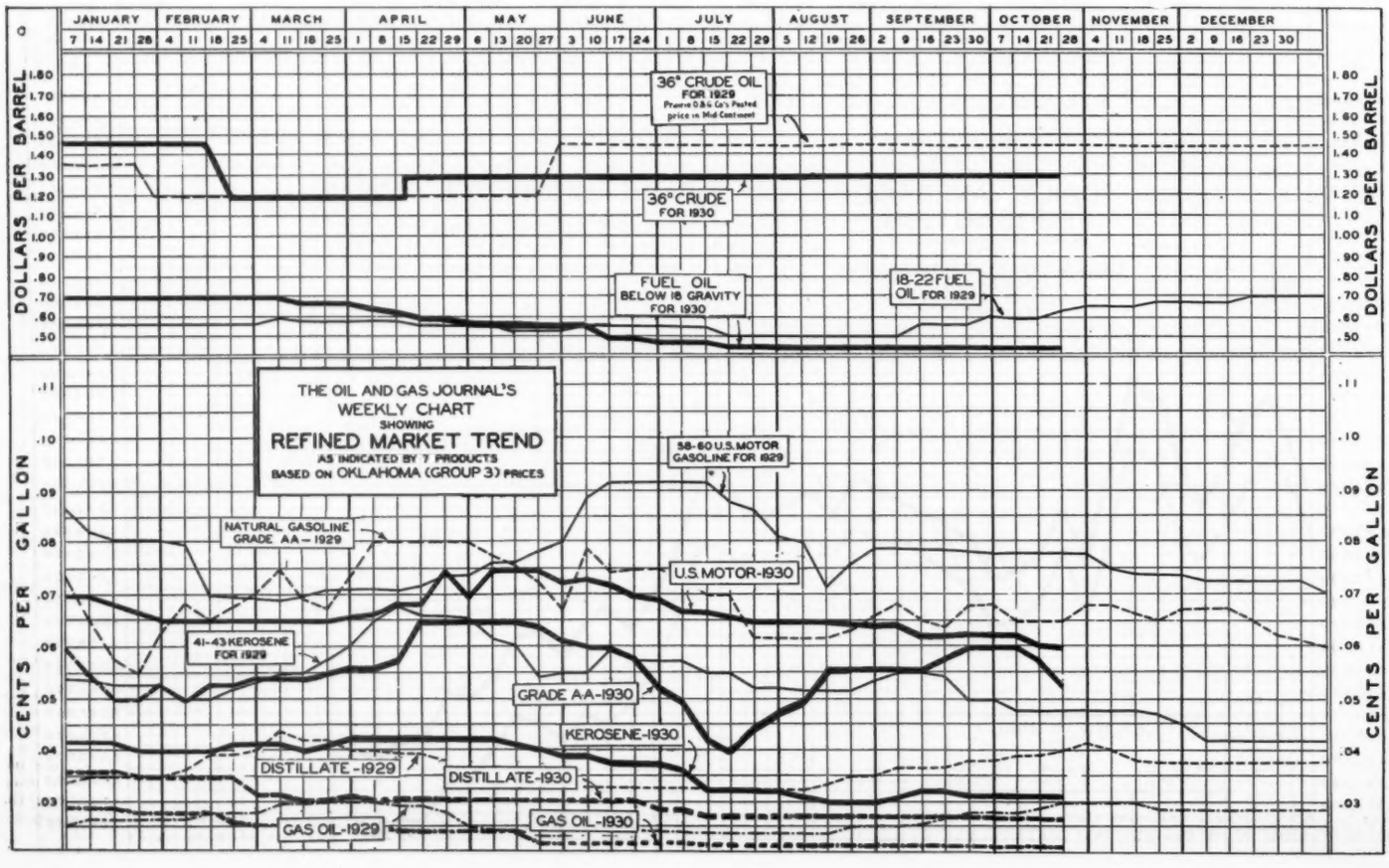

Unit Agreement on Kettleman Hills

Two-Unit Plan Tentatively Adopted for North Dome With General Approval of Operating Companies. Papers Now Being Prepared

By L. P. Stockman

LOS ANGELES, Calif., Oct. 21.—Kettleman Hills operators, realizing the dynamic potentialities of this field and the chaos which would result from promiscuous unrestricted drilling, have tentatively ratified a proposal to subject the North Dome to unit development and while it will be some time yet before final details are finished the engineering features have been worked out and the basic fundamentals agreed upon.

As was indicated in The Oil and Gas Journal a few weeks ago a double unit plan has been agreed upon, both units to be co-ordinated by a central governing body. Under the agreement reached last week in San Francisco holdings of the Standard Oil Co. in the North Dome will comprise one unit while holdings of all other operators will make up the second. The Standard will operate the unit consisting of its acreage and a mutual association will be incorporated to have full and exclusive charge of the second in co-operation with the Standard's unit.

The double unit of operation was proposed by the Standard because under a single unit plan it would control approximately 58 per cent of the total probable productive acreage and thus be in the undesirable position of dominating the future policy with respect to development. Under the new two-unit plan the Standard's control is reduced to 50 per cent. There are a few minor legal details yet remaining to be worked out but these, together with the proposed adjustment in the sliding scale of royalties, should be adjusted in the near future.

Unit development in the North Dome at Kettleman Hills will not become operative until all signatures have been put on the dotted line but the optimistic tenor of the executive session indicated that this would be but a matter of formality. All operators holding acreage on top of the structure have agreed in principal to the proposal and the generous treatment accorded to those holding acreage around the edge and out on the flanks of the anticline is indicative of ultimate success.

As an inducement to those holding minority interests operators have agreed that there will not be any downward revision in the amount of acreage involved even though part of the acreage now included in the unit plan is subsequently proved commercially unproductive. This guarantee does not preclude an upward revision in the event that the productive limits of the field are later extended beyond what at present appears to be the outer limits of production. These two features should encourage support of the plan especially in view of the fact that it would be utterly impossible and result in economic suicide for anyone holding acreage around the edge of the structure to undertake the intensive drilling which would be drilled by the association on more favorably located property.

Notable Meeting

One of the most interesting features in connection with the proposed unit plan of development at Kettleman Hills is the fact that all cards were laid face up on the table and spades were called spades at the executive session held late last week. This is evidenced by the fact that the plan was tentatively ratified by officials of the General Petroleum, Associated, Union, Milham Exploration, Continental, Pacific Western, Petroleum Securities, Shell, Superior, Amerada Petroleum, Richfield, North American, Consolidated, Carl Beal, George Getty Oil Co., and the Standard Oil Co., as well as by Dr. George Otis Smith representing the Department of the Interior.

Mr. Lombardi's Statement

M. E. Lombardi, a member of the Kettleman Hills conservation committee and a director of the Standard Oil Co., summed up the executive session held in San Francisco last week by stating:

"Evidence is accumulating that the plan for controlled operation of the North Dome at Kettleman Hills is nearing a satisfactory completion. The plan contemplates operation of the entire productive area of the North Dome by two units, or two managements, each one of which will control 50 per cent of the probable productive acreage. One of these managements will be the Standard Oil Co. of California, owning approximately 58 per cent of the field, while the other management will be an association of the operators controlling the remainder of the field. Provision is made that the two units will develop the field as economically as possible and in the interests of conservation under a co-operative agreement.

"It will be remembered that, soon after discovery of this field by the Milham Exploration Co., the Department of the Interior moved to effect an arrangement whereby any great development would be postponed for two years. The Department of the Interior is interested because about 35 per cent of the land involved is government owned and is leased to operators under the leasing act of 1920. The original shutdown agreement of the operators was made on July 25, 1929, and expires on June 13, 1931.

California's Greatest Reservoir

"The Kettleman Hills Field is rated by those best qualified to know as California's greatest reservoir for gas and gasoline for the future. It became evident that if unrestricted production was allowed it would result in a tremendous waste of natural resources, particularly natural gas, to the detriment of the industry in northern California, especially in the future. For more than a year engineers and geologists of the oil companies interested have been working on a plan whereby all of the government acreage and other acreage other than fee land owned by the Standard Oil Co. could be combined and operated as a unit, thereby eliminating wasteful competition in drilling.

To Prepare Papers at Once

"The recent meeting in San Francisco, which was attended by the executives of all the oil companies interested, was called for the purpose of deciding upon the various principals involved. Very substantial progress toward complete agreement on these points was made and final papers are to be prepared at once. Dr. George Otis Smith, director of the United States Geological Survey, representing Secretary Wilbur, attended the meeting. The unit plan will have to be satisfactory to the secretary since government lands are involved. He is authorized through an amendment to the leasing act passed at the last session of Congress to approve a unit plan and to make necessary changes in the government leases affected so as to make this plan operative."

Railroads to Reduce Rates on Gasoline

Submit Proposal to Interstate Commerce Commission to Combat Gasoline Pipe Line Competition

By W. T. Ziegenhain

The building of two major gasoline pipe lines from the Mid-Continent refining area to large consuming centers throughout the northwestern states has prompted railroads operating over this same territory to investigate the possibility of posting reductions in their rates and within the past week J. R. Koontz, vice president of the St. Louis & San Francisco Railway Co., made the following announcement by wire, which may lead to this end:

"Frisco and Katy have submitted proposition establish on gasoline only to Kansas City 18 cents, St. Louis 22 cents, Chicago 27½ cents per 100 pounds, from refining points within zone of threatened pipe line competition as follows: Bristow, Sapulpa, Tulsa, Muskogee, Boynton, Okmulgee, Covington, Fairmont, Enid, Sand Springs, Arkansas City, Augusta, Wichita, Neodesha, Joplin; Katy stations, Muskogee, Tulsa, Cushing, Yale, Cleveland, Coffeyville, Chanute and Joplin; these rates to apply only on shipments in tank cars owned or under lease to shipper and no mileage allowance to be paid on car while under load. Proposition as submitted by Frisco and Katy will be considered by all carriers and after such consideration referred to Interstate Commerce Commission for their review and approval; rate to Chicago to apply only via St. Louis and connections of Frisco and Katy."

Mid-Continent refiners see in this move a determined effort on the part of the railroads to hold oil traffic to the rails but they are also mindful of the plea the railroads made only a short time ago in which they said it would be impossible to reduce rail rates. The attitude taken by the railroads in the past has been that oil rates were as low as rates on other commodities and that further reductions would cause requests to be filed for lower rates on these other commodities, and a general reduction could not be granted.

Pipe Line Tariffs Not Known

The pipe line tariffs on gasoline have not been decided upon, so it is not possible to draw a comparison between the charges of the two carriers, but it is believed that the pipe line rates on gasoline will closely approximate the rates already in effect on crude. However, in addition to the present bare pipe line tariff on crude oil, it is customary to add a 20-cent gathering charge and a 10-cent brokerage charge per barrel, which brings the total pipe line charge to 76 cents to Chicago as an example, whereas the bare pipe line tariff is 46 cents.

If the new gasoline pipe line companies dispense with the usual gathering charge and eliminate the brokerage charge, the newly proposed rail rates will still be considerably higher than the pipe line tariffs, according to the following table:

Cost of Transporting a Barrel of Gasoline From Okmulgee, Okla., to Several Key Points Along the Great Lakes Gasoline Pipe Line

To—	By rail present rate	By rail proposed rate	Present pipe line tariff on crude
Kansas City	$.7067	$.4990	$.3075
St. Louis	.8316	.6098	.3725
Chicago	.9979	.7623	.4600

The actual saving to the refinery operating its own fleet of tank cars would be less than the above difference in the two sets of rail rates suggests, however, since no mileage earnings will accrue to the refiners.

Analyzing this more closely, the actual experience when shipping an 8,000-gallon car of gasoline from Okmulgee, Okla., to Kansas City may be taken. If the new rates are carried into effect, there would be a reduction of 7½ cents per 100 pounds in the rate, which on 8,000 gallons is $36.60 per car. The mileage earnings amount to $9.24 which leaves a net reduction on that car of $30.36; to St. Louis, there would be an 8-cent reduction, which amounts to $42.24, and mileage from Okmulgee to St. Louis and return would amount to $14.07 a car, making a net reduction of $28.17; to Chicago an 8½-cent reduction, amounting to $44.88 per 8,000 gallons, and Okmulgee to Chicago mileage, short line, would be $22.56, making a net reduction on an 8,000-gallon car of $22.32.

In the above cases only short line mileage has been used and greater earnings could be shown if the refiner takes advantage of the use of other lines.

In the above telegram, no mention is made of proposed rates to intermediate points and it is difficult to say what attitude the commission might take under the conditions at hand.

It has been the general practice to reduce rates at intermediate points at any time major reductions were made in the rates to key points. This at least, has been the trend of rate changes since 1925. On the other hand, the commission permits lower rates on transcontinental hauls than to intermediate points in many instances and has authorized rates to certain key points under unusual conditions, as exceptions to the general rule.

Oklahoma refiners are viewing this move on the part of the railroads as the first definite evidence that they recognize the pending competition pipe lines will offer with respect to the transportation of refinery products. In past years crude lines have been furnishing refineries in the Chicago area with Oklahoma crude and the Oklahoma refiners have been at a disadvantage in many instances to compete with the Chicago refiners in the midwestern states. Since this northern territory represents the logical marketing territory for Mid-Continent refiners, the future of the refining industry resolved into a matter of relative transportation costs.

Pipe Lines Cheaper

The railroads probably also see the growing intensity of pipe line competition due to the lesser costs of the pipe itself, more modern pumping equipment, etc. Another factor which promises to enter into the problem is that of water transportation, whereby refining companies will establish depots along the important rivers and distribute their products by barge. It is understood that the Phillips Petroleum Co. is thoroughly in-

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Proration Is an Engineering Problem

With the Agreement to Allocate Crude Oil Requirements Among the Several Major Producing Areas New Technical Problems Confront Engineer

By L. G. E. Bignell
Petroleum Engineering Editor

The petroleum industry has grown so rapidly in all its branches in the past 10 years and is now so completely organized and equipped that the old problem of future supply has lost its significance. If the present oversupply of oil can be kept in its natural reservoirs under ground for a period of six or eight months longer and no new pools be opened in the meantime, it now appears that the industry can start the summer of 1931 in a good healthy condition.

Methods of locating structures that probably contain oil and gas have been greatly improved during the past decade. By the use of geophysical instruments much territory has been covered by the geologist and upon his recommendations the land departments have "checkerboarded" vast areas in all of the major producing states and some new territory is being brought into favorable consideration. Michigan has been added to the long list of producing states in comparatively recent years, as well as Mississippi, and active work is being carried on in Florida, Alabama and Georgia and parts of Arizona and it is possible that they will in time join this group.

Not only has improvement been made in geophysical prospecting methods but drilling methods have also been vastly improved, so that now it is not uncommon to find pools that are located more than 6,000 feet below the surface, and production is coming from below 9,000 feet in exceptional wells.

All of this improvement in range of drilling depths as well as speed and accuracy in drilling has placed the industry in command of equipment that can be utilized to uncover vast stores of crude oil that a few years ago were dreamed of but not commercially possible of producing.

This improvement in drilling technique is not only in the mechanical equipment but the major companies and drilling contractors are so highly organized in every department that they can start wells upon very short notice and finish them in record-breaking time.

Rapid Drilling Now Common

In the Seminole area of Oklahoma it was demonstrated very forcibly that the companies seeking oil could get results in a very short time for that field was drilled so rapidly that within eight months its flush production equalled that of the old Cushing Pool after it had been drilled for nearly three years and in 12 months' time Seminole had passed all previous flush production records.

On December 4, 1928, the first well was completed in Oklahoma City at a total depth of approximately 6,450 feet and this field now has about 600 producing wells and 200 more drilling and it is variously estimated that the potential of this field is upward of 2,000,000 bbls. per day. In fact, it is stated that if it were permitted to flow all wells wide open at one time they could produce all of the oil required in this country.

And this large pool is by no means the only one that could supply the country's requirements, for Yates Pool in Pecos County, Texas, is estimated as being capable of producing 5,500,000 bbls. of oil daily and Kettleman Hills, California, is reported to be capable now of producing 250,000 bbls., not gallons, of gasoline daily and by December 1 it is estimated that the new wells now drilling will double this output. That amount equals the total gasoline requirements for California and its trade territory so all other California production will be excess if Kettleman Hills is permitted to flow wide open.

This neglects all of the other production in this country from the 300,000 other wells that wish to deliver their quota of oil for consumption, so it is not hard to understand why it is necessary to make some adjustment to curb the flooding of the country with oil that cannot be used and which would cost money to store as well as be subject to a constant loss by evaporation while in storage.

It is well to think of that type of waste when consideration is being given to conservation of this natural product for the United States Bureau of Mines has very definitely determined that the loss of the light end from crude oil exposed to the air, even in so-called "vapor pressure" or "gas-tight" tanks is an appreciable item and that loss can never be made up and is represented by a direct reduction in the gasoline content of the crude.

With all of these fields now ready to produce and with the driller able to complete 5,000-foot holes in about 30 days, it is reasonable to state that if all drilling were suspended for the winter months and the oil in storage reduced appreciably, the industry could start drilling in the spring and within 30 days have enough additional wells finished to supply the current demand. In other words, the industry is now so well organized that it can within 60 days' time drill enough new wells and put them on production to take care of its current demands without regard to old wells and oil in storage above ground.

Situation Unique

In this respect the oil industry is quite unique for it is hard to select any other major industry that is so thoroughly organized that it could reproduce its raw material in as short a time as could the petroleum industry if it became necessary.

If all wheat was suddenly destroyed it would be necessary to await the complete cycle of planting, growing, harvesting and transporting before flour would again be available to the people.

The steel industry draws upon its supply of ore in an orderly manner and its condition is reported as "tons of steel on order," not as material on hand unsold, and in this way it is keeping its house in order without oversupplying the market.

But with crude oil it seems that every producer considers only his particular well and thinks that by producing it the small amount it makes as compared with the total consumption is negligible. But when thousands of individual wells are placed in the same class the total amount of oil that could be brought to the surface is surprisingly large.

It, therefore, becomes necessary for the industry to take matters into its own hands and regulate the flow of oil from the ground, for this particular commodity when once used can never be reclaimed in any other form and is destroyed forever. It is not like the grains that can be reproduced from season to season, or lumber that can be grown again even though it may take hundreds of years to duplicate our present forests. The metals are for a large part reclaimed and perhaps with the exception of zinc are used over and over and the new supply in this way is held at a minimum.

Control of Supply Necessary

Under these conditions it is quite necessary that the supply of crude oil should be controlled for while some optimists state that if we did not have petroleum from which to make gasoline some other source of power would be made available it must be remembered that these changes in types of prime movers come about very slowly as witnessed by the introduction of the internal combustion engine in its present form. It is very safe to estimate that it will be 20 years before any radical change

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Wide Spacing With Deep Drilling

Enormous Production of Modern Fields Holds Back Much Inside Drilling While Wildcatter Is Busier Than Ever

By James McIntyre

Our attention has been called to tables published in The Oil and Gas Journal showing the percentage of dry holes drilled over a long period of years in American oil fields, which indicate that in spite of our advancement in geological and geophysical science there are fewer oil wells and more dry holes actually, and in proportion in recent years than a decade or two ago. The question is asked why we have not been able to reduce the percentage of failures with our better methods of finding oil. Greater fields have been brought into being in recent years than ever before, and the geologist is given due credit for this, therefore the average oil man is at a loss to account for the increase in failures, both in total number and percentage.

First let us discuss the decline in completed oil wells as compared with years ago.

The industry has been overburdened with crude oil for years, which has led to the slow development of some pools, in which individual wells were capable of yielding very large production. For example the Yates Pool is several years old but there remain many undrilled inside locations. The same may be said of big properties owned by the Gulf Production Co. in the Crane-Upton area of West Texas, which are being held back for future drilling, even though it is felt certain that hundreds of oil wells could be drilled on this acreage if the oil were needed. The Texas Panhandle would have been good for perhaps 5,000 more oil wells had the market price of oil remained high enough to warrant the development of the 150 miles of almost sure-shot undeveloped acreage in that region.

The slow development of the Van Pool in Van Zandt County, Texas, is another case in point. Had there been a demand for the oil hundreds of oil wells would have dotted the landscape in that area. The curtailment of the Greater Seminole area has held back drilling in a large field that would have lowered the dry hole average. In Oklahoma at this time drilling is being discouraged in new pools like Tatums, Carter County; Chandler, Lincoln County; West Perry, Noble County; Orlando in Payne County, as well as in the many pools in the Greater Seminole area, not yet fully explored.

In Kansas producers have a curtailment campaign which has slowed up drilling in the very places where oil may reasonably be expected. Take the Schurr Pool in Rice County, as an example. There are five producing wells in, three wells shut down on top of the sand, and none drilling. In ordinary times with pipe lines soliciting oil the Schurr Pool would have been good for a lot of oil wells that have not yet been drilled. These examples could be continued, but they suffice to establish the point made which is that less drilling is being done in the productive areas while there has been an actual increase in wildcat drilling in the hope of uncovering more big fields, and it is always the wildcatter who contributes the most to the dry hole column.

Wider Spacing of Wells

Another reason for the increased percentage of dry holes or rather, the decreased percentage of oil wells, lies in the fact that one oil well is being drilled on the same sized space on which four oil wells were drilled in years gone by. For example, when the Bartlesville sand was being developed in Nowata and Rogers Counties, in Oklahoma, there were many leases where four oil wells were drilled on 10 acres and in no case were less than nine wells drilled to the 40 acres. This nine-to-the-forty custom prevailed during the development of the same general area westward in Washington County, Tulsa County and eastern Osage County. Then a regulation was made in the Osage Nation limiting drilling to 25 wells to 160 acres and many quarter sections were drilled up in that way.

One of the reasons for spacing the wells farther apart was that the pay sand was deeper than in the eastern portion of the same general producing area, and the cost of drilling wells increased in proportion.

When the Burbank Field was opened below 2,900 feet wells were spaced still farther apart. Each drilling well was located in the center of 10 acres, or 16 wells to the quarter section. The cost of the 2,900-foot well in Burbank was greater than the cost of four wells in Nowata and Rogers Counties. One well drained 10 acres as thoroughly as the four wells had done, as evidenced by the per acre recovery in the Burbank Field as compared to that of the shallower fields to the east.

The custom of locating nine wells on a 40-acre lease, or in some cases 16 wells to the 40 was brought from the older eastern fields where wells located 150 feet from the property line, with only 300 feet separating each well, was a not uncommon practice, particularly in the shallow areas.

Evolution of Spacing

The great Glenn Pool in Creek and Tulsa Counties, Oklahoma, opened in 1905, which up to 1915 was the largest producer of high grade oil ever developed in the United States, was drilled nine

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Greasewood Dome Discovery Important

Opens Up Possibilities in Dakota Formation Far Out in the Plains From the Mountain Range in the Denver Basin

By Tolbert R. Ingram

DENVER, Colo., Oct. 18.—The Platte Valley Petroleum Co.'s discovery well, No. 1 Patterson, on the Greasewood Dome in Weld County, northeastern Colorado, which came in October 10, blowing oil more than 100 feet over the top of the derrick, is looked upon generally as one of the most important in the State since the Union Oil Co. of California found oil in the Dakota formation on the Wellington Dome in Larimer County on November 11, 1923. The Wellington discovery proved the possibilities in the Muddy sand of the Dakota series in Colorado east of and near to the main range of the Rocky Mountains. The Greasewood well, in the NE SW SW, Section 24-6n-61, opens up possibilities in the same horizon far out in the plains from the mountain range in what some writers call the Denver Basin, but which others name the Julesburg Basin.

The geologists describe the folding in the new area as more typical of structures in the Mid-Continent Field than the domes with sharp accentuated dips which predominate in the Rocky Mountain States. The possibilities for finding oil in northeastern Colorado have been a question for years and the oil men have differed widely in their appraisal of the region.

The Greasewood well is located 50 miles east and a little south of the Fort Collins-Wellington Field and 60 miles northeast of Denver in an air line. The nearest railroad points are Orchard, 10 miles to the south on Union Pacific Railroad, and Fort Morgan, 25 miles to the southeast on the Chicago, Burlington & Quincy Railroad. Both of these lines operate into Denver and the Union Pacific runs close by the refinery which the Continental Oil Co. has under construction north of the city limits.

Flowing by Heads

The discovery well came in at 1:30 o'clock Friday morning, October 10, at a total depth of 6,642 feet. After blowing for a few minutes it settled down to making heads at intervals of about three hours. The heads last from 12 to 22 minutes. The flow at each head is estimated at 10 to 30 bbls. The oil is carried off through a 4-inch pipe and blows for a distance of 50 or more feet at each head. The gas is estimated at 5,000,000 feet per day.

The first important show of oil was at 6,610 feet in what the driller called the Benton shale. The oil rose 200 feet in the hole and showed by tube test a gravity of approximately 37°. It was a green oil of paraffin base. The 4¾-inch casing was lowered and this oil shut off and at 6,630 feet it entered a hard lime formation.

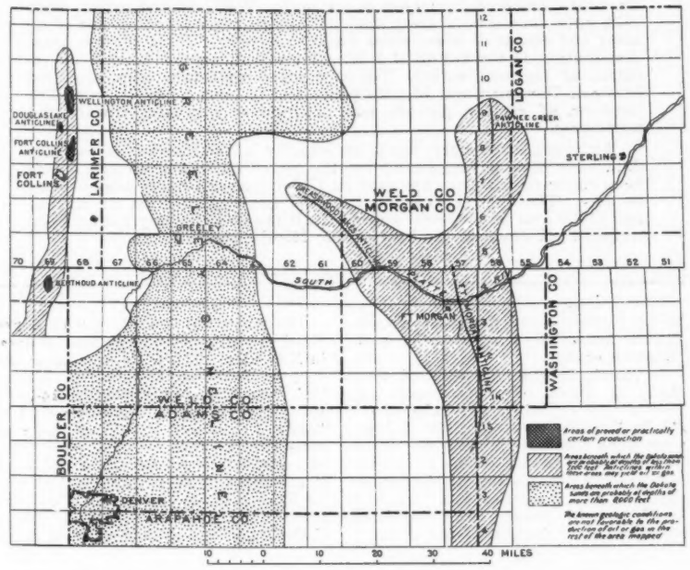
The last samples taken before the well came in showed shale with a little sand and the drillers estimated that the well was 20 to 40 feet off the Muddy. The hole passed out of the Niobrara into the Benton at around 6,240 feet. At this depth it cut the Codell, or Nio-Benton sand which contained some shows of oil. The oil now coming from the hole varies in gravity from 42° to 44°.

Operations were suspended as soon as the well came in and no further drilling has taken place. The boilers were moved back, a control head has been installed on the 4¾-inch pipe and the Continental Oil Co. co-operating with the company, has a crew on the ground erecting a battery of storage tanks moved in from the Fort Collins Field. Future plans are being discussed by the directors of the company. It is expected that the well will be deepened into the sand. The hole was reduced at 4,400 feet and from that depth to the bottom the 4¾-inch has been carried close behind the tools.

Throngs Visit Well

The discovery has attracted wide attention and around 1,500 automobiles and 5,000 visitors were at the well Sunday, many of the automobiles showing Oklahoma, Kansas and Texas licenses. Most of the major companies have had scouts at the well and while some leasing is reported, no authentic record of deals are available. The company controls about 8,000 acres in a block around the well. Some of the geologists who have examined the area express the opinion that the well is close to the edge of the structure, but this remains to be determined.

The Platte Valley company was formed more than six years ago with a capital of $500,000 divided into shares of 10 cents par value and financing proceeded as the well was drilled. Often it ran out of funds and suspended operations until more money was provided. The persistence of the backers of the project has won admiration. A reorganization took place about two years ago and Denver and Chicago business men became identified with the company. Frank Kirchof, president of the American National Bank of Denver, became financially interested. C. F. Stahl, of Denver, is president; Menus Johnson, Chicago, vice president, and A. E. Shogren, Fort Morgan, secretary and treasurer. Other directors are Walter E. Schwed, Denver; E. T. Breding, Chicago; and Dewey Anderson, Denver. Three brothers, W. E., Frank and Mel Shaffer, were the drillers who put down the well. The well commenced spudding on May 6, 1926.


WELLINGTON ANTICLINE
DOUGLAS LAKE ANTICLINE
FORT COLLINS ANTICLINE
FORT COLLINS
LARIMER CO
GREELEY
LOGAN CO
PAWNEE CREEK ANTICLINE
STERLING
WELD CO
MORGAN CO
SOUTH PLATTE RIVER
BERTHOUD ANTICLINE
FT MORGAN
WASHINGTON CO
WELD CO
ADAMS CO
BOULDER CO
DENVER
ARAPAHOE CO
Areas of proved or practically certain production
Areas beneath which the Dakota sand is probably at depths of less than 6000 feet
Areas beneath which the Dakota sands are probably at depths of more than 6000 feet
The known geologic conditions are not favorable to the production of oil or gas in the rest of the area mapped
10 0 10 20 30 40 MILES

Department of the Interior, United States Geological Survey map of northeastern Colorado, showing areas favorable or unfavorable for the occurrence of oil or gas.

The possibilities of the eastern Colorado area came in for attention shortly after the Wellington Dome discovery in 1923. Early in 1924, the Greely Chamber of Commerce engaged Dr. R. D. George, state geologist, to make a survey of the oil possibilities in Weld County and this work was done by Charles Lavington under Doctor George's direction.

Recommended for Drilling

The George report recommended the Greasewood Dome for drilling. It said that the west dips of 2° to 3° were found at several places west of the Osgood post office and that there appeared to be a structure beginning at the south end of Greasewood lakes and running northwest. Good northeast dips were found in Township 7n-61w. Doctor George said that the southeast and southwest dips were not so reliable but that it was fairly certain that they existed from the appearance of the escarpment at the south end of the lakes. East of this structure opposing dips of 5° to the west and 3° to the east were obtained in Sections 30 and 32-7n-60w. This fold, Doctor George reported, extended into Morgan County.

To meet the demand for information on the region, field studies were made by the United States Geological Survey from May to September, 1924. The work was done by Julian D. Sears, who was assisted by James Gilluly and later by Ralph G. Lusk. Mr. Sears returned to Washington in June and thereafter the work was directed by Kirtley F. Mather. This report in detail was published in 1928 as Bulletin 796-B under the title "Geology and Oil and Gas Prospects of Northeastern Colorado."

John G. Bartram, geologist for the Midwest Refining Co., discussed the possibilities in the Julesburg Basin in a paper published in The Oil and Gas Journal on January 23, 1930. C. H. Rankin had a short paper on "Geologic Work in Eastern Colorado" which was published in The Oil and Gas Journal on April 24, 1930.

While attention was called to the presence of a large anticlinal fold in Weld and Morgan Counties, extending down into Washington County, as early as 1924, no test of the structure was made that would either prove or disprove the area until the Platte Valley well reached the pay.

I. T. I. O. Well Drilling

In March, 1930, the Indian Territory Illuminating Oil Co. spudded in on its No. 1 State, C NE NE, Section 16-1n-57, on the Fort Morgan anticline, 36 miles to the southeast of the Greasewood well. At 3,050 feet, the company reported that the formations were running normal, that the bit was in the lower part of the Pierre shale and that the Hygiene sand was represented by a sandy shale that did not contain oil. It is estimated that this well will reach the Greasewood pay at 1,000 to 2,000 feet shallower depth.

One other well in this area drilled in the meantime was the Northeastern Colorado Oil Co.'s No. 1 State, SW cor., Section 36-8n-55, 36 miles northeast of

(Continued on Page 138)

MAJORS AND MINORS CUT PRICES IN SEVERAL OKLA.-TEXAS FIELDS

The practice of cutting prices paid for crude oil in several Texas counties started about two weeks ago by local independent refiners and brokers resulted in a general cut in crude prices in Wichita, Wilbarger, Archer and northern Young Counties in the North Texas Field and in Gray, Hutchinson and Carson Counties in the Texas Panhandle Field.

The first of the big companies to lower its prices in the above named areas was the Humble Oil & Refining Co. on Thursday, October 16. It made an average cut of about 35 cents per barrel in the four North Texas counties named, 24½ cents in Gray County and 12½ cents in Carson and Hutchinson Counties. This cut was met by the Prairie Oil & Gas Co. on October 16 and by all the other major buyers in the several areas named on October 17.

Magnolia Extends the Cut

The Magnolia Petroleum Co. on October 17, went farther, and while adopting the Humble prices in all seven counties named by the Humble, applied the North Texas schedule of prices also to the Central Texas pools in which it buys oil on a gravity basis and to the so-called fault line pools in Limestone and Navarro Counties in East Central Texas, where it buys on a gravity basis. The Stanolind Crude Oil Purchasing Co. (Standard of Indiana), which had met the Humble price schedule in the North Texas counties named, then met the Magnolia price schedule as it applied to all pools in which the Stanolind purchased oil in North and Central Texas and East Central Texas. It does not buy in the Panhandle fields.

The Magnolia Petroleum Co. in extending its price cut to other than North Texas counties appears to have made simply a gesture as it buys practically no oil in East Central Texas and very little in the Ranger-Eastland district. Its latest reported runs from the Mexia district are given as 714 bbls. per day, of which all but 6 bbls. is its own production, while its runs from the Central Texas area are given as about 927 bbls. per day, of which 734 bbls. is its own production, 137 bbls. run for the account of the Humble, and 56 bbls. for the Texas company.

On the other hand, the Stanolind Crude Oil Purchasing Co.'s runs outside of the Wichita, Wilbarger, north Young Counties are said to be over 8,000 bbls. a day, of which 6,889 bbls. is purchased oil and 1,154 bbls. its own oil or oil contracted for, and this includes 354 bbls. a day of runs from properties of the Sinclair Oil & Gas Co. The Stanolind is said to run 1,100 bbls. a day from the Mexia district, of which 800 bbls. is purchased; 1,450 bbls. from the Ranger district, of which 1,096 bbls. is purchased; 4,874 bbls. in

(Continued on Page 136)

Distribution of the Pre-Mississippian

Structural Conditions in Mid-Continent Discussed With Relation to Occurrences in the Various Areas

By Hugh McClellan
Geologist, Burke-Greis Oil Co., Tulsa*

ABSTRACT

The first recorded evidence of beds of pre-Mississippian age in Kansas was in 1908. These range in age from pre-Cambrian to Devonian, but do not outcrop in the State. Wells drilled for oil since 1925 have furnished a great deal of information regarding the character and extent of these older Paleozoic rocks. Their present areal distribution is the result of a long history of repeated earth movements of regional extent. The two most important ones occurred between Devonian and Mississippian and in post-Morrow time. The duration of erosion periods was progressively greater toward the northwest.

Although the paper deals principally with Kansas, where the data have been accumulating for the past four years, an effort has been made to present new data in Oklahoma and bring the map up to date. The map represents the areal geology of most of Kansas and Oklahoma as it would appear if all the sedimentary series were stripped off down to the base of the Mississippian.

Sedimentary rocks of pre-Mississippian age do not outcrop in Kansas, and their existence, although suspected, was not proved until they were discovered by the drill. Thus the determination of the pre-Mississippian stratigraphy is entirely dependent on well cuttings and cores and on long-range comparisons with outcrops in adjacent states, hundreds of miles away. In Oklahoma the entire section is exposed in the Arbuckle Mountains and the outcrops have furnished a check for subsurface data gained in oil field development. Deep wildcat wells in Kansas, particularly in the west ranges, were not drilled until several years after the subsurface stratigraphy had been fairly well determined in Oklahoma.

Schrader‡, in 1908, recorded beds below the Mississippian encountered in a well near Caney, Kans., but it is probable that his correlations are erroneous.

As early as 1921, Aurin, Clark and Trager[1] had traced the Tyner formation and an Ordovician "Siliceous lime" (now known to be Arbuckle) northward from Oklahoma into Kansas along the Granite Ridge as far as the north line of Chase County. Because the wells available at that time were nearly all on a pronounced subsurface structure, only the lower part of the Ordovician beds of Kansas was represented, all the section between the Tyner formation and the basal Mississippian having been removed by post-Devonian erosion.

In March, 1926, Udden[2] reported green shales of Black River (Decorah) age from a well drilled by the Valerius Oil Co. in Russell County in 1924. A bryozoan fauna found in the shale was examined by T. E. Savage of the University of Illinois, who made the age determination, and this conclusion was supported by Udden and Roundy, who considered the fossils to be definitely Ordovician.

The writer's first contact with a pre-Mississippian section in Kansas occurred in November, 1926, while examining drill cuttings from the Empire Gas & Fuel Co.'s No. 1 Woodbury, Section 14-9s-4e, Riley County, which was commenced in 1924 and completed in 1925. It was with some surprise that a bright green shale was encountered between 2,635 and 2,645 feet in depth, lithologically identical with the Tyner shale of Oklahoma. A bryozoan fauna was found in the shale, chiefly Escharopora and Rhinidictya cf. mutabilis, thus strongly suggestive of Decorah age.

This clue led to the examination of other old deep well samples and to an unpublished report dated December 14, 1926, in which the following statement was made:

"A study of all the samples available . . . leads me to the conclusion that there is a pre-Chattanooga section in northern Kansas, north of Township 16s, which corresponds to the pre-Chattanooga section of Oklahoma."

Late in 1926 Twenhofel[3] reported the occurrence of Decorah fossils from a green shale in several deep wells in Russell County. About the same time the present period of active wildcatting in western central Kansas began, with the result that the available data increased rapidly.

Early in 1928 Barwick[4] published a description of the stratigraphy and structure of north central Kansas, in which new names were proposed for the several stratigraphic units. In 1929 Edson[5] published a correlation of these rocks with those of surrounding states.

The construction of a map showing the subsurface distribution of the pre-Mississippian rocks in Kansas naturally follows from the work of White[6] in Oklahoma. The map in northeastern Oklahoma is largely that in White's paper, with some revisions and additions necessitated by new data particularly in Cherokee and Adair Counties.[7] The Sylvan exposure in Seminole County is after Levor-

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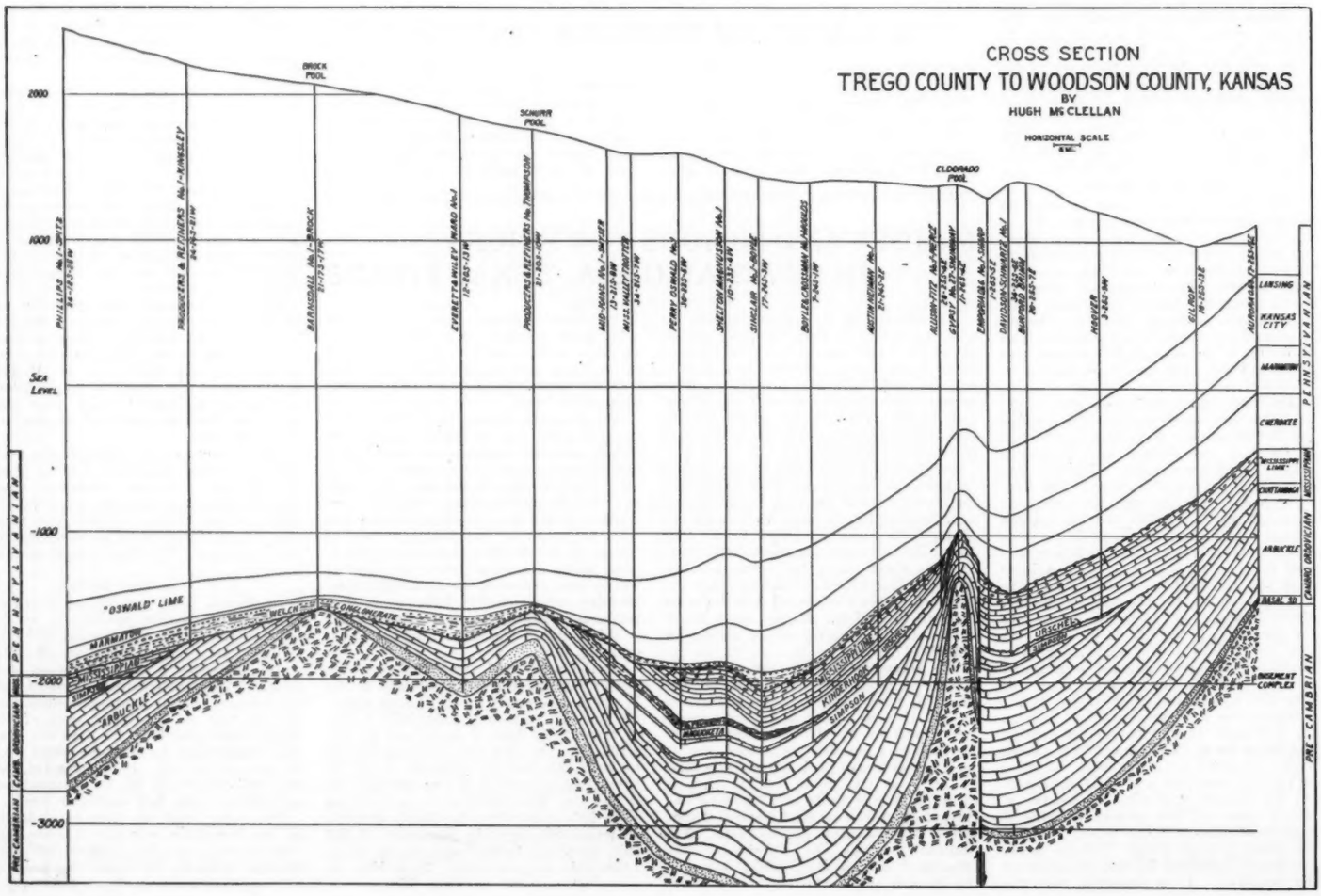
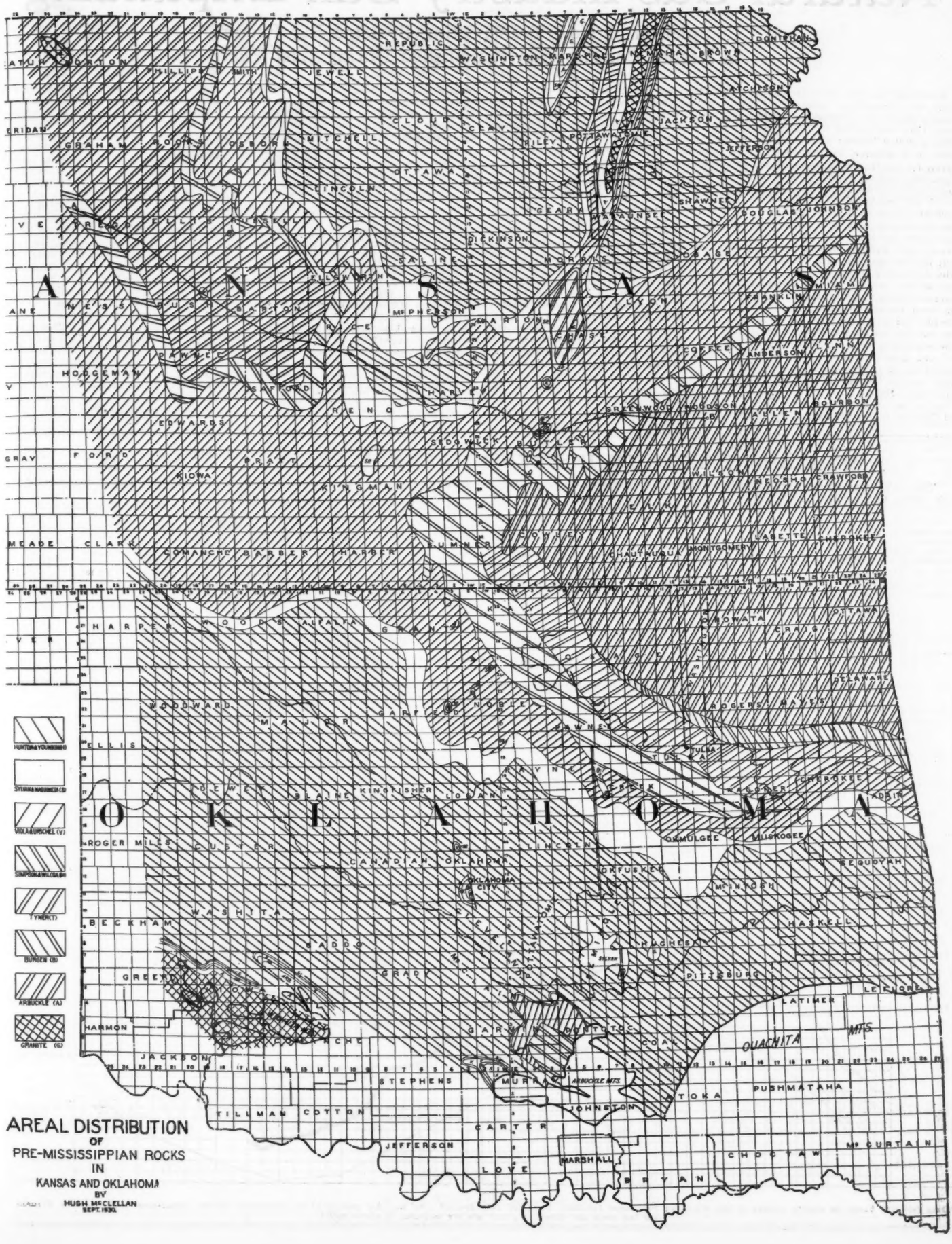


sen,[9] and the area just north of the Arbuckle Mountains is largely by Dott.[9] The work of Roth[10] is followed northwest of the Arbuckles, near the Robberson Field.

The writer is greatly indebted to Frank T. Clark of Bartlesville for his active interest in this map since its beginning in 1926, and for the delineation of some of the older producing areas along the Granite Ridge.

Aside from the areas mentioned, the control for the map is largely the result of well sample examinations and subsurface work by the writer covering a period of four years.

(Continued on Page 107)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Natural Gas Industry Still Expanding

Completion of New Transporting Systems Big Factor in Record Consumption Established During Last Year

The steady growth which has characterized the natural-gas industry of the United States for a number of years was more than maintained in 1929, says the United States Bureau of Mines, Department of Commerce, in a statement prepared by G. R. Hopkins, economic analyst. During that year a total of 1,917,693,000,000 cubic feet of gas was produced and marketed. This represents a gain of 22 per cent over the 1928 production as compared with an increase of 8 per cent for 1928 over 1927, and with an average annual increase of 10 per cent for the past 10 years. This unusual growth resulted primarily from the completion of a number of new distributing systems entering several states and reaching many towns and cities not previously served with gas. The Bureau of Mines has no data as to the exact number of new towns and cities served with natural gas, but from the standpoint of domestic consumers, or meters in domestic service, there was an increase of 772,000, or 18 per cent in 1929.

Deliveries of natural gas to Canada and Mexico increased from 160,000,000 cubic feet to 242,000,000 cubic feet, which, when deducted from the total 1929 production, gives 1,917,451,000,000 cubic feet as the total consumption for the year. This consumption was divided between 359,853,000,000 cubic feet, or 19 per cent, for domestic purposes and 1,557,598,000,000 cubic feet, or 81 per cent for all industrial purposes. The industrial consumption included the following items: 705,083,000,000 cubic feet, or 45 per cent, used for field purposes, that is, as a fuel for boilers and engines in oil and gas field operations, and for operating natural gasoline plants; 261,107,000,000 cubic feet, or 17 per cent, burned in the manufacture of carbon black; 112,707,000,000 cubic feet, or 7 per cent, burned as fuel by public-utility power plants; 103,729,000,000 cubic feet, or 7 per cent, burned as fuel at petroleum refineries and 374,972,000,000 cubic feet, or 24 per cent, used for general industrial purposes.

Texas Leads in Production

Texas, by virtue of a 54 per cent gain in output, became, for the first time, the leading natural-gas producing state. This resulted primarily from a material increase in production in the Panhandle area. Oklahoma was second, with California third, but the latter State showed a greater annual increase than Oklahoma. Both Louisiana and West Virginia, which rank fourth and fifth respectively, reported increases in output in 1929. Some of the other States—notably Kentucky, Montana, Michigan and New Mexico—made material gains in output in 1929.

There were 5,116,000 domestic consumers on December 31, 1929, as compared with 4,344,000 at the beginning of the year. California showed a 61 per cent gain in number of consumers and displaced Ohio as the first-ranking State in this respect. A large part of the gain in consumers in California was due to the completion of the San Francisco line the latter part of the year. Nearly all of the states showed an increase in number of consumers over 1928 and no state reported a decrease. California and Ohio rank well ahead of the other states in number of consumers and their totals, 1,239,000 and 1,214,000, respectively, are nearly double that of Pennsylvania, the third-ranking state.

The total consumption of natural gas for domestic purposes in 1929 amounted to 359,853,000,000 cubic feet as compared with 320,877,000,000 cubic feet in 1928, an increase of 12 per cent. The average consumption per domestic consumer, which has been declining steadily in recent years, fell off materially in 1929 when it amounted to only 70,300 cubic feet as compared with 73,900 cubic feet in 1928. This decline was due primarily to the fact that the number of consumers includes those connected to the San Francisco line; but since this line was not placed in operation until the latter part of the year, the consumption figure includes the gas used by these new consumers over a short period only.

Domestic Consumption

The gas burned for domestic consumption in the United States in 1929 was valued at a total of $223,172,000 or an average of 62 cents per 1,000 cubic feet, the same as the average reported for 1928. This is the first time since 1908 that the average annual price has not increased over the preceding year. In only one

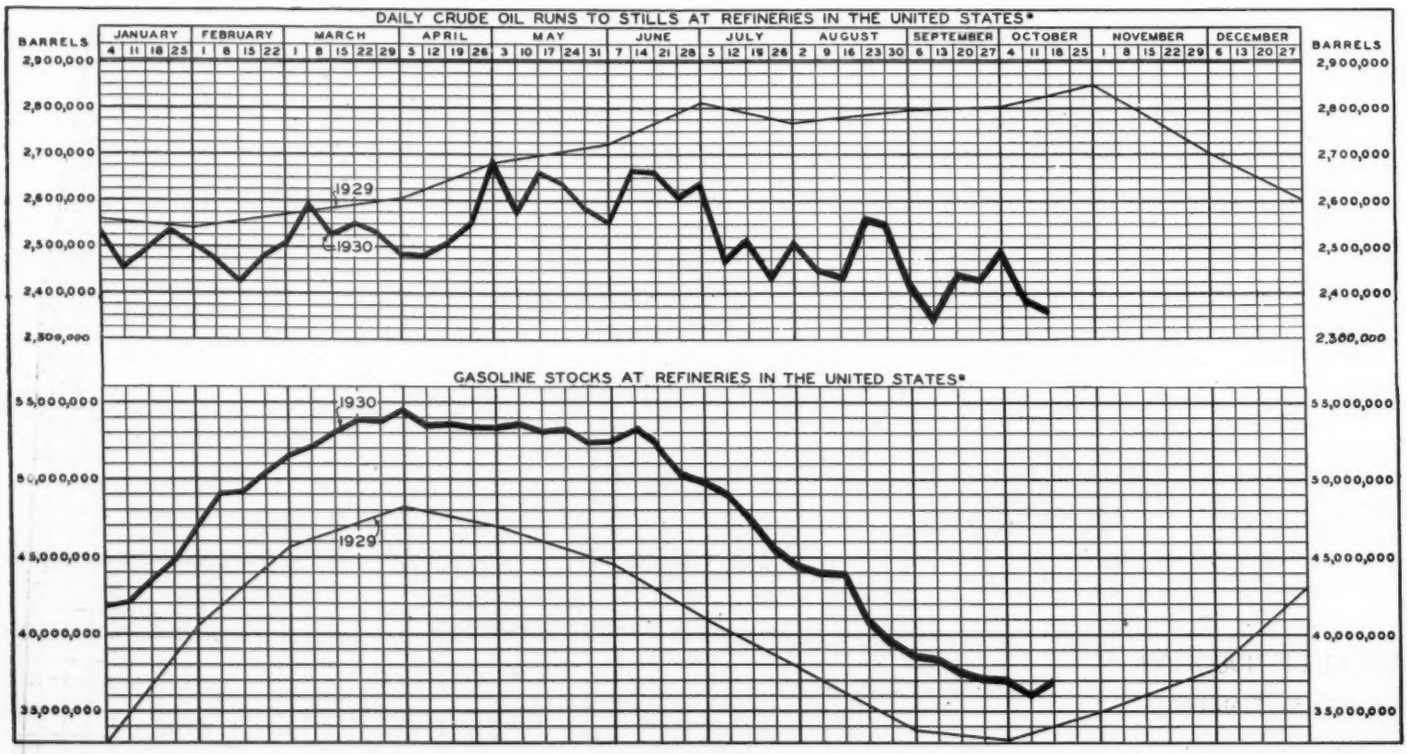
(Continued on Page 136)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending October 18.

	Week ending August 18				Week ending October 11				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	497,600	5,519,000	11,974,000	100.0	493,900	5,364,000	11,813,000	100 0	454,857	5,998,000	7,431,000
Appalachian	93.2	75,000	879,000	983,000	93.6	73,700	966,000	1,026,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	97.5	254,100	5,140,000	4,207,000	97.5	271,400	5,398,000	4,177,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.4	249,000	2,438,000	4,858,000	89.4	267,900	2,460,000	4,771,000	87.7	263,428	3,604,000	3,277,000
Texas	91.9	566,000	5,739,000	10,563,000	91.9	570,600	6,107,000	10,275,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	98.3	159,400	1,142,000	2,064,000	98.3	149,100	1,178,000	2,145,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.1	50,900	1,698,000	1,128,000	93.1	46,800	1,725,000	1,116,000	93.3	41,614	2,273,000	973,000
California	98.3	508,400	13,721,000	104,258,000	98.3	497,600	13,927,000	104,134,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.6	2,360,400	36,276,000	140,035,000	95 6	2,371,000	37,125,000	139,457,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	422,300	4,597,000	7,677,000	100.0	442,900	4,958,000	7,459,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	97,900	915,000	2,064,000	100.0	95,700	956,000	1,378,000	100.0	108,514	1,877,000	3,818,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

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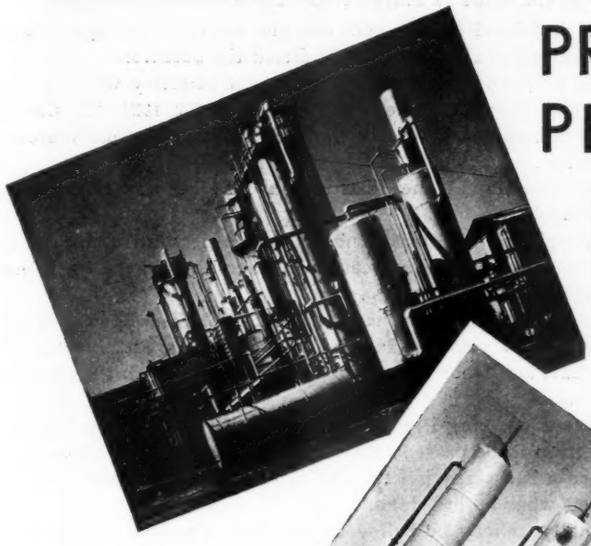

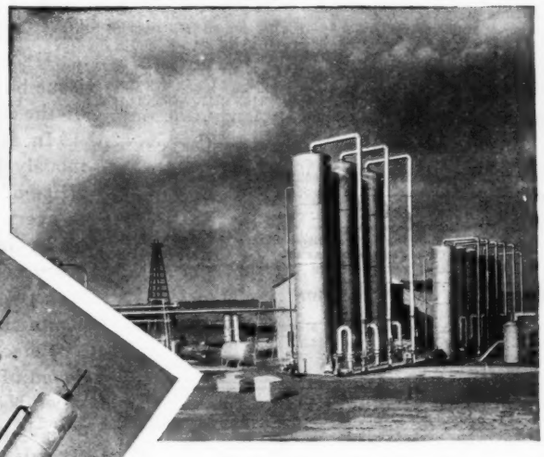

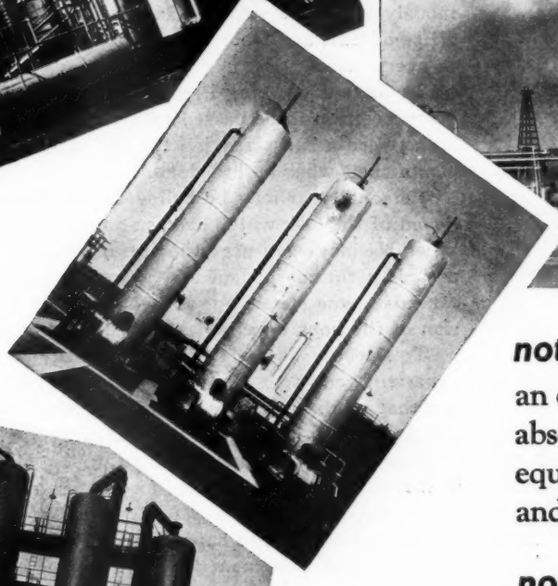

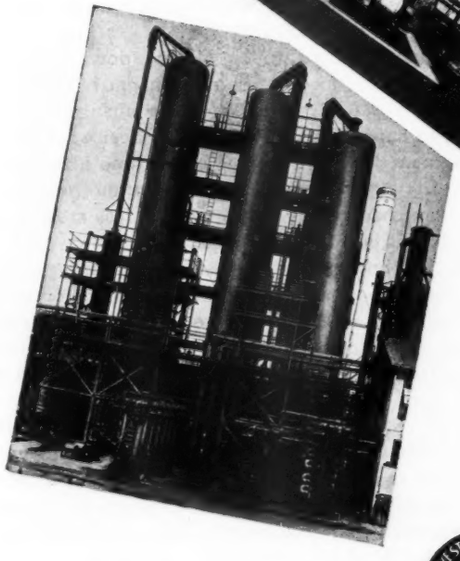

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THE NEXT A.P.I. PRESIDENT

The most important action to be taken by the American Petroleum Institute at its annual meeting in Chicago next month will be the selection of its President for the ensuing year.

Upon the wisdom of that choice will depend, in large measure, the continuance of the energetic administration which has made the Institute the focal point for the formulation and execution of oil industry policies.

Those who recall the beginnings of the Institute will remember the difficulties that beset its launching.

The sharply individualistic and keenly competitive units of the industry had been united for the first time by the force of patriotic service during the stress of the world war. And then only for the period of that emergency.

The "return to normalcy" would have been exceedingly prompt in the petroleum industry had it not been for the bright idea of striving to salvage the co-operative spirit shown in defense of the nation and continuing it for the good of the industry.

Most of us recollect the mixed reception which that suggestion received.

Men who were proud to work together in the nation's hour of need became suspicious of each other when invited to stay together and work for the welfare of their common industry. Some feared a sinister purpose behind the proposed organization and many felt certain that it could never be effected or, if established, could never be held together. Others held aloof, if not hostile or suspicious, at least indifferent.

Born in such circumstances the new Institute had to walk warily. The first few years were periods of experimentation and education. There were problems that needed leadership, but premature action by the Institute would have provoked a storm of criticism and dissension.

Limiting itself to noncontroversial matters or those openly supported by the bulk of the industry, the Institute offered a center for discussion which gradually broadened into leadership.

Each succeeding president had fitted admirably into the conditions of his time.

The earlier misunderstandings were being dispelled, former prejudices were being weakened and the possibilities of the Institute for practical benefit to the industry were being demonstrated.

Having seen its usefulness the industry began to look to the Institute for more and thus has been realized the hopes of its founders.

This consummation came none too soon. When overproduction threatened to overwhelm the industry and co-operation was seen as the only remedy the success of the Institute was an encouraging example of the value of united effort for a common purpose.

It was at this critical moment that the Institute was again happy in the selection of a President who fitted the occasion.

As the writer of the famous letter to the industry which evoked The Oil and Gas Journal editorial of April 28, 1927, "It Can Be Done," Mr. Reeser had forced the issue from one of discussion to one of action.

At the meeting of the Institute in 1928 he was unanimously chosen President.

He brought to that office not only the personification of the issue but unfaltering and unwearying leadership and the confidence of the industry.

In recognition of what had been accomplished he was unanimously relected a year ago and has continued at great personal sacrifice of time and labor to keep in constant touch with the situation in every state.

In these days being President of the Institute is no merely honorary position to be passed around. During Mr. Reeser's two years it has been a full-sized job for any man who did the work and accomplished what he has done.

Personally, it may be believed, Mr. Reeser would gladly be relieved of the task which makes an undue demand upon a busy man's time. He may even urge the argument that no man should serve as president for more than two years, but at the moment there is no candidate who stands out as so completely identified with the question of the hour or who has had so much experience in handling it.

To select a successor, however worthy of the honor, lacking that experience and that identification with the issue, would be a handicap that might seriously imperil the whole conservation movement just at present in its most difficult stage.

The movement cannot afford to be slowed down even for a moment. It requires to maintain all the momentum it has attained under Mr. Reeser's active leadership. While a change was being made something might happen to wreck what has been accomplished.

The whole movement has been one of crises, one after another. No sooner has one difficulty been overcome than another has been discovered. There have been many times when a less stout hearted leader might have despaired of the outcome.

Of course, initiative, however enthusiastic and energetic, cannot get far without active support and Mr. Reeser has been fortunate in having the wholehearted co-operation of the leaders of the industry in the several states. Their counsel and individual labors have been a large factor in pushing the co-operative movement along and maintaining it in the face of every discouragement.

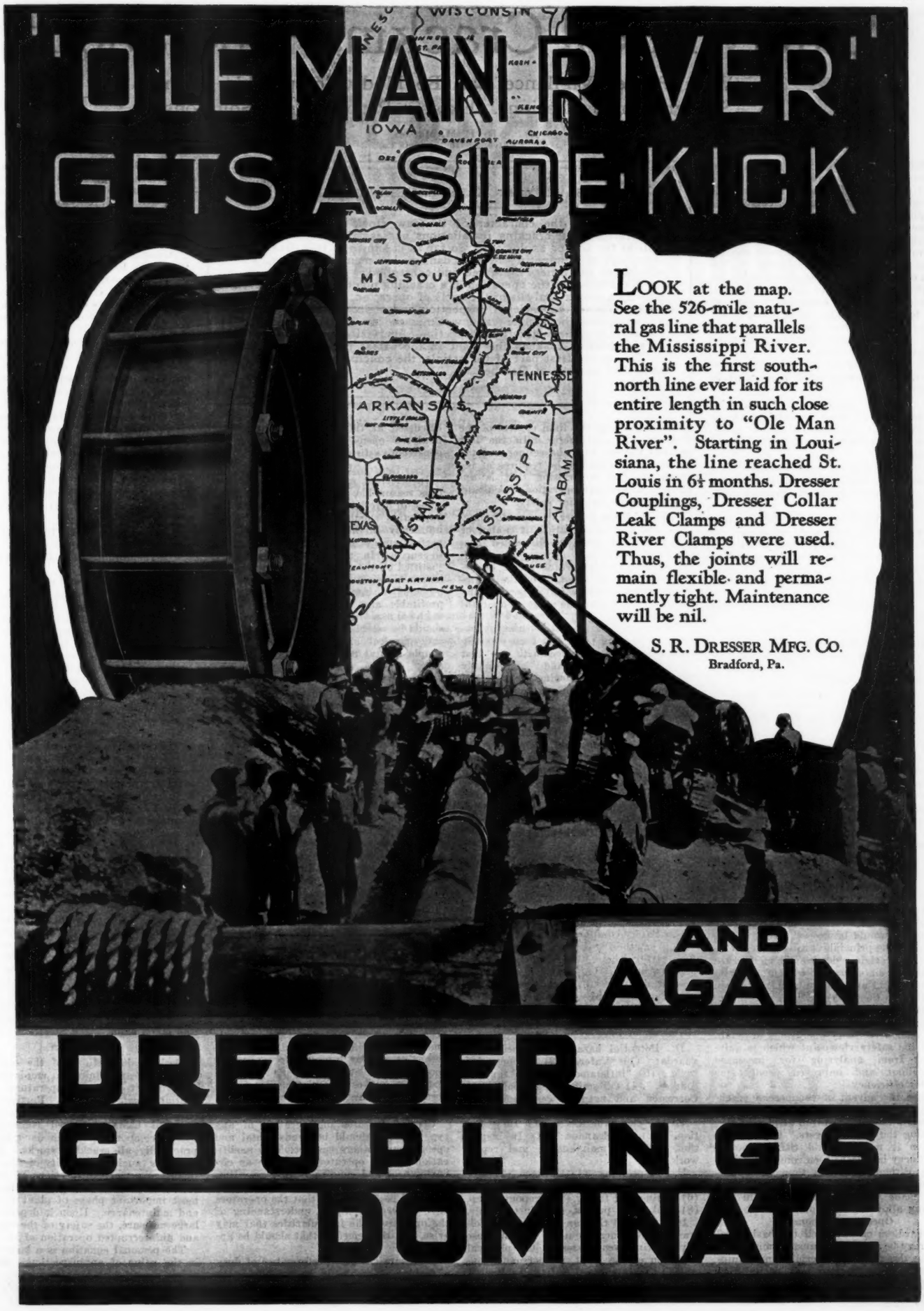
Credit must be given also to the good sense of the industry at cap that might seriously imperil the whole conservation movement.

It is this solidarity that is repeatedly menaced by new developments. Although begun as a remedy for an emergency, succeeding developments have proved that co-operation must continue as a permanent policy if the industry is to succeed.

Just at the moment it is being subjected to the most crucial test yet encountered. It is not too much to say that the future of the industry will be decided by the course of events during the next six months.

The selection of Colonel William J. Donovan, former assistant attorney general of the United States, to be the chief speaker at the general session of the Institute, having for his subject "The Anti-trust Laws" is significant. It was Colonel Donovan's interpretation of the administration of these laws, in an interview in The Oil and Gas Journal, which shaped the early course of the curtailment program.

The American Petroleum Institute and the industry will be fortunate if it has leadership as sound, as vigilant and as successful as it has had during the past year.


'OLE MAN RIVER'
GETS A SIDE-KICK
LOOK at the map. See the 526-mile natural gas line that parallels the Mississippi River. This is the first south-north line ever laid for its entire length in such close proximity to "Ole Man River". Starting in Louisiana, the line reached St. Louis in 6½ months. Dresser Couplings, Dresser Collar Leak Clamps and Dresser River Clamps were used. Thus, the joints will remain flexible and permanently tight. Maintenance will be nil.
S. R. DRESSER MFG. CO.
Bradford, Pa.
AND AGAIN
DRESSER COUPLINGS DOMINATE

Safety In Oil Cracking Operations

With Proper Vigilance Can Be Made Comparable With Straightrun Distillations. Explain Problems and Solutions

By E. M. Matson
Universal Oil Products Co.

Safety in the operation of cracking plants has had the attention during the past few years of some of the best technologists in the designing, engineering, chemical and metallurgical fields. Because of this fact, it can be said with assurance that cracking equipment today is operated generally in a far safer manner than is much of the atmospheric distillation equipment in the petroleum refineries.

The very fact that inherent hazards attend the cracking operation is responsible for the great amount of thought and study that has been put on the subject and the consequent reduction of those hazards to a minimum.

In safe operation of cracking equipment, the following basic facts must be considered:

1. In the handling of inflammable liquids, and in their processing accompanied by the generation of gas or vapor, there is involved the danger of fire and explosion.

2. The liquid or vapor is heated to a temperature which when brought in contact with the air will produce self-ignition.

3. The liquid or vapor usually contains corrosive compounds destructive to container and conductor equipment.

4. Under the temperature conditions prevailing in a cracking plant, the strength of the equipment is materially reduced.

5. The boiling range of the cracking stock is in excess of that of water.

6. When pressures are above atmospheric, boiling points are raised and storage of potential energy is increased, and consequently the possibilities of equipment failure are also increased.

There are other factors that have an influence upon the hazards of cracking equipment, but they are dependent upon these basic facts.

In order to promote safety for any given cracking installation it is necessary to recognize the possible dangers involved, analyze them, evaluate them, and determine how, when and where any particular possible danger may make itself manifest. When this is done the necessary remedial measures may be applied. These measures may be found in the principle of the operation, design, materials, the actual operation, or the maintenance.

In this presentation no attempt will be made to show where, when and how any of the basic dangers in any given cracking installation may become manifest. To do this, it would be necessary to analyze, in detail, the principle involved, the equipment, materials, "hook-up," method of operation, maintenance, etc., of each installation. Furthermore, for any given installation there may be variations in individual units due to local conditions. This work should be done by specialists who analyze refinery operations in detail, from the safety viewpoint which is quite apart from analyzing for increased throughput and improved product or greater efficiency.

Since the advent of commercial cracking the designers and manufacturers of materials have made rapid strides in recognizing the basic dangers. In this connection it may be said that, although metallurgy has never been confronted with more difficult problems than those presented by cracking, great strides have been made by the metallurgists in improving alloys and equipment.

Operator Responsible

Regardless of how well the basic dangers may be guarded against or minimized in the design, the materials and equipment, these precautions may be nullified by unintelligent operation. Therefore, the actual safety of any cracking plant is somewhat beyond the final control of the designer and constructor. In the last analysis it rests with the refiner and the character of operation he requires of his crews and the supervision that is applied to insure safe operation. Constant vigilance is required for safety.

Even with the proper design and materials, and careful operation, it cannot be said that all dangers are eliminated from cracking operations, because there remains the very important factor of depreciation in the strength of the equipment, which requires its inspection and maintenance beyond the stage of doubtful conditions.

Assuming that from the safety viewpoint a cracking plant has been properly designed and constructed with the best available materials, and is properly "hooked up," the following is presented as an outline of the subjects or items that require investigation.

Outline of Investigation

A. Personnel: (1) Operatives — (a) operators, (b) cleanout men, (c) inspectors, (d) maintenance and repair men, (e) substitutes for sick, special or vacation leaves of absence. (2) Qualification requirements—(a) physical, (b) mental. (c) previous experience. (3) Character of instruction—(a) practical, (b) process classes. (4) Shift changing, days off, doubling shift.

B. Supervision: (1) Operation—(a) charging and testing, (b) starting up, (c) on stream period, (d) shut down. (2) Cleanouts—(a) disassembly, (b) cleaning, (c) reassembly. (3) Inspections. (4) Maintenance and repair.

C. Safety equipment and devices: (1) Steam smothering lines and hoses. (2) Fire extinguishers. (3) Blankets, goggles, helmets, masks. (4) Alarms. (5) Quick descent devices. (6) Remote controls—(a) dampers, (b) process valves, (c) steam smothering line valves. (7) Dead and live unit signs. (8) Safety valves. (9) Dropout lines.

D. Potential hazards and their safeguards: (1) Water. (2) Vapors—(a) toxic, (b) inflammable. (3) Ignition sources. (4) Oil spillage and pools. (5) Corrosion and natural wear and tear. (6) Drainage.

E. Unsafe practices: (1) In operation. (2) In cleanout. (3) In inspection. (4) In maintenance and repair work.

F. Inspections: (1) Furnace, (2) tube bank, (3) vessels, (4) piping, (5) valves, (6) drains and traps, (7) dropout sump, (8) tanks, (9) pumps, (10) instruments.

It is believed that an investigation following this general outline will disclose any existing weaknesses in the physical condition of the plant, its personnel, operation, maintenance, safety equipment and also any dangers that may exist. While only a comparatively few will be discussed at this time, each item when analyzed opens a very interesting and constructive field for thought.

Personnel

In selecting men to perform any task it is reasonable, before making any selections, to determine the qualifications that applicants should have in order to give uniformly intelligent, efficient and safe performance of duty. This is the keynote to success in modern industry and is justified on the basis of large investments in machinery and equipment which must be handled intelligently in order to be profitable and safe. Therefore, simple minimum qualification requirements should be established. These should cover age, physical and medical examination, simple mental tests and previous experience.

Men selected as operators should be in good physical condition and without disabilities, have good sight, hearing and sense of smell; be able to read, write and make rudimentary calculations; be free from nervous disorders; be able to adjust habits of sleep and recreation so they will be fresh on all shifts; be of a mechanical turn of mind, and have previous refinery experience. The same qualifications may be applied to maintenance men, inspectors and cleanout men. In addition, the maintenance men should have wide experience as regards mechanics, and the inspectors should have or develop that painstaking, searching, inquisitorial mind which investigates beyond "surface" indications. Cleanout men, if they are to be promoted to any of the operating positions, should meet substantially the same requirements as operators.

Training

Regardless of how well the men making up the various crews comply with qualification requirements, it is unreasonable to expect that there will be uniformly intelligent operation of the three crews (8-hour shifts) throughout the 24 hours of a day unless the crews are carefully and uniformly instructed and brought together at regular intervals to review the hook-up, complete cycle and results of operation, causes of and remedies for irregularities, emergency shutdown, safety measures, first aid requirements, etc.

Certain features of operation of any type of unit should be fundamental and specific, and others susceptible to modification by the operator in charge as circumstances and conditions require. But, before such latitude is given or allowed, it should be determined that the operators have a very intelligent understanding of the operation, the irregularities that may arise, and the remedies that should be applied.

To insure the best performance of duty a regular class should be established to meet at stated intervals so that all men may be instructed uniformly and gain the same understanding of the operation. To this class all questions of operation and irregularities should be brought and there discussed. Not only will this result in greater safety but it will also result in maximum throughput, greater yield, improved products and reduced depreciation.

Although the operatives of a cracking plant may be well trained and competent in so far as their individual duties are concerned, yet their combined effort will not be productive of maximum safety unless properly guided and supervised. This is particularly true because of the fact that in the cycle of operation (fire to fire, or stream to stream, as the case may be) several distinct and different groups of men are involved, each one of them requiring strict adherence to definite safety practices and methods. In addition there are three separate shifts in the operating crew, with the ever-present tendency, unless supervised, to apply individual personal ideas in the operation, hoping to demonstrate superior operating ability. These groups may be classified as follows:

A. Operation—(1) Charging and testing, (2) starting up, (3) on stream, (4) shut down.

B. Cleanout — (1) Disassembly, (2) cleaning, (3) reassembly.

C. Inspection — (1) Preparation, (2) tests.

D. Maintenance and repair.

An analysis will show that the safety of the men employed in each of these groups is dependent not only upon their own individual performance of duty but upon that of the men in the other groups as well. This then emphasizes the need for co-operation and co-ordination of effort on the part of the entire personnel in the furtherance of safety to all. This can only be accomplished by proper supervision.

Supervision

The supervision should be of such a character that there is specific assignment of duties with undivided responsibility for proper performance on the part of individuals, crews, or foremen of crews, so that the source of authority over the plant as a whole is centralized. Divided responsibility and decentralized authority introduces self-interest on the part of crews and individuals, lack of consideration for the safety and welfare of others, and indifference toward established methods, safe practices and plant regulations. It is a deterrent to the knitting together of a group of employes of divergent duties into a smooth-working organization imbued with the purpose of safe and efficient accomplishment. Supervision, to be of value, must select the indices of improper operation or maintenance and make corrections at frequent and regular intervals. Supervision that functions only when something goes wrong is misleading and of no value.

Inspection

Periodic inspections of the equipment comprising any equipment employing high pressures at elevated temperatures are essential to safe operation. Particularly is this true of a cracking plant in which the material being processed contains corrosive compounds, which is typical of practically all cracking stocks. Experience has taught the futility of attempting to forego periodic inspections of cracking plant equipment and it has now become a most important phase of plant operation and maintenance. Upon it depends, in a large measure, the safety of the operators and uninterrupted operation of the plant.

The personal equation is a large factor in the value of an inspection. This requires a man with an appreciation of the responsibility of the work involved, sound

(Continued on Page 137)

SAFETY PROBLEM CAN BE SOLVED

Because of the character of the raw stock and the products manufactured all cracking installations possess the potential possibilities for fire or explosions. So far as is known at this time there is no way of eliminating all such dangers but many of them may be eliminated and others mitigated and controlled.

Weaknesses in the operation of a cracking plant can be discovered only by a proper analysis of the cycle of operation, equipment, "hook-up," personnel, supervision, inspection and maintenance. With this accomplished the dangers and weaknesses can be determined and corrected and the methods of inspection, supervision and maintenance arranged so as to keep the plant in the safest possible condition.

This is the first part of the article, the concluding portion to be published in issue of October 30.

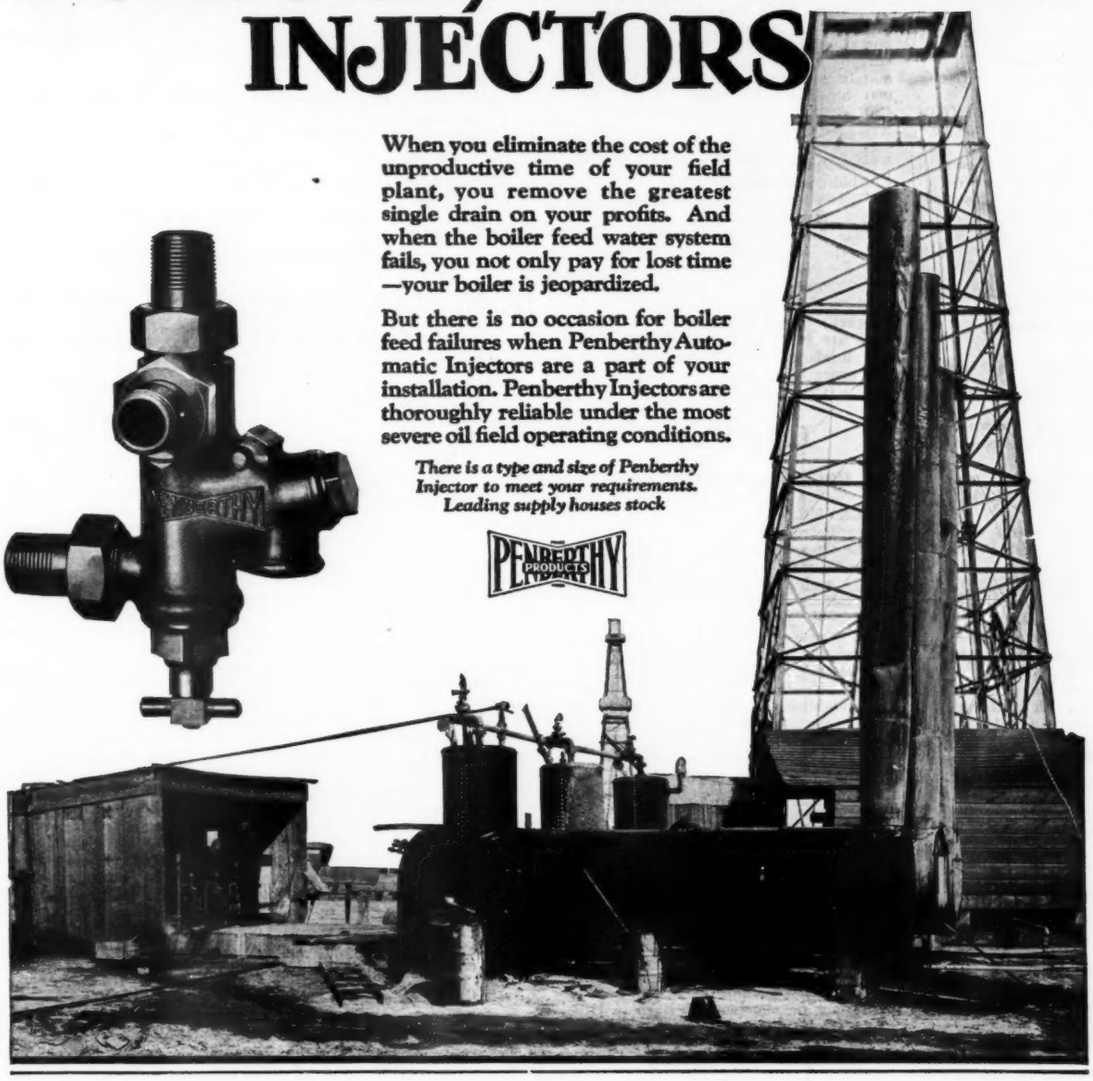
Eliminate Shut-down costs with Penberthy Automatic INJECTORS

When you eliminate the cost of the unproductive time of your field plant, you remove the greatest single drain on your profits. And when the boiler feed water system fails, you not only pay for lost time —your boiler is jeopardized.

But there is no occasion for boiler feed failures when Penberthy Automatic Injectors are a part of your installation. Penberthy Injectors are thoroughly reliable under the most severe oil field operating conditions.

There is a type and size of Penberthy Injector to meet your requirements. Leading supply houses stock

PENBERTHY PRODUCTS



PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 — DETROIT — CANADIAN PLANT WINDSOR, ONT.

EFFORT BEING MADE TO CURTAIL CRUDE PRODUCTION IN VENEZUELA

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Oct. 20.—Negotiations for a cut of 9 per cent in production of petroleum in Venezuela have been initiated by Lago Petroleum Corp., subsidiary of Pan American Petroleum & Transport Co., according to announcement by R. G. Stewart, president of Pan American. Mr. Stewart added that thus far two of the major interests in Venezuela have not yet approved the suggestion. The three interests to which Lago's proposal was addressed are Shell, Gulf and Creole (Standard Oil Co. of New Jersey). Sir Henri Deterding, managing director of Royal Dutch-Shell, some months ago expressed his willingness to participate in a curtailment program in Venezuela if sufficient co-operation could be obtained from other companies, but lacking this co-operation, Shell's output has steadily increased since that time.

Official Announcement

The official announcement of Lago's proposal reads as follows:

"The Lago Petroleum Corp. (Pan American Petroleum & Transport Co.) has submitted to the Shell, Gulf and Creole (Standard of New Jersey) companies a proposal that production of oil in Venezuela be reduced 9 per cent from the output as of October 1, 1930.

"Announcement of this step toward further restriction of oil production in Venezuela to conform to the policy of limitation and prorating in force in the United States was made by R. G. Stewart, president of Pan American.

"Mr. Stewart said his company had made the proposal at the request of the Standard Oil Co. of Indiana, which controls Pan American, and as an answer to a memorial which independent producers in convention in Texas recently addressed to Edward G. Seubert, president of the Indiana company, asking him to use his good offices toward bringing about reduction of oil production in Venezuela. The proposed limitation was fixed at 9 per cent as being approximately the same as the ratio of reduction to which United States producers have voluntarily submitted.

"During 1930 Pan American has not increased its production, storage or transportation facilities in Venezuela. The current output in Venezuela is approximately as follows: Pan American 105,000 bbls. a day; Shell 176,000 bbls.; Gulf 62,000 bbls.; Creole (Standard of New Jersey) 24,000 bbls.; total 367,000 bbls. Under the Pan American offer the total output would be cut by about 33,000 bbls. a day.

"While two of the companies concerned have indicated that they are unwilling to reduce their present production, the subject remains open for further negotiation."

Production by Companies

Of the four interests mentioned in Mr. Stewart's announcement, only Lago and Shell are running ahead of 1929 production totals in their Venezuelan producing operations. Gulf and Creole, the

(Continued on Page 138)

OIL MAN'S CALENDAR

OCTOBER

16-25—London, England, Olympia Motor Show.

22-24—Pittsburgh, Pa., transportation meeting, Society of Automotive Engineers.

23-24—Mineral Wells, Tex., convention, Texas Petroleum Marketers Association.

24—Niagara Falls, Ontario, Convention, Natural Gas and Petroleum Association of Canada.

24-25—State College, Pa., Oil and Gas Conference, Penn State School of Mineral Industries.

27—San Antonio, Texas, Independent Petroleum Association of Texas.

29-31 — Lawrenceville, Kans., celebration twenty-fifth anniversary, Lawrence County Oil Industry.

NOVEMBER

2-5—St. Louis, Mo., Marketing Congress, Independent Oil Men of America, Statler Hotel.

6-11—Berlin, Germany, International Automobile Show.

10-13—Chicago, eleventh annual meeting, American Petroleum Institute, Stevens Hotel.

12—New York, Oil Trades Association of New York, Roosevelt Hotel.

13-14 — Chicago, American Oil Chemist's Society, Congress Hall.

DECEMBER

1-5—Memphis, Tenn., ninth annual Asphalt Paving Conference, the Asphalt Institute and Association of Asphalt Paving Technologists.

2-4—Omaha, Neb., convention, Nebraska Independent Oil Men's Association, Paxton Hotel.

3-4—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

8—New Orleans, La., American Institute of Chemical Engineers.

JANUARY

8-10—New York, National Automobile Show.

24-31—Chicago, National Automobile Show.

FEBRUARY

16-21 — San Francisco, Calif., National Western Metal Congress and Exposition.

Late Fields

ROCKY MOUNTAIN AREA

DENVER, Colo., Oct. 21.—The Platte Valley Petroleum Co.'s No. 1 Patterson on the Greasewood Dome, Weld County, Colorado, was turned into the tanks on Friday and averaged 250 bbls. daily at first and increased to 300 bbls. It will be a week or 10 days before any attempt is made to drill the well into sand and in the meantime there are indications that it will drill itself in.

The proration committee for Hobbs Pool established daily allowable production for the last half of October at 31,715 bbls. Allowable production in the first half of month was 32,340 bbls. daily. Potential production on October 16 was 819,193 bbls. from 106 wells on 95 units.

GULF COAST

HOUSTON, Tex., Oct. 21.—Humphreys Corp.'s No. 1 Fitzgerald, semi-wildcat on the north side of the Barbers Hill Dome, Chambers County, was completed flowing at the rate of approximately 1,600 bbls. daily on a half-inch choke from sand at 5,300-67 feet. The sand in this well, like in the other wells in the new development at Barbers Hill,

(Continued on Page 141)

MAGNETIC STORM

The Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report that a moderate magnetic storm started at midnight of October 16 and ended at 8 a.m. on the eighteenth, both times given in central standard time. The telegrams read:

"Storm began seventeenth. Six. Moderate."

"Storm ended eighteenth. Fourteen."

CUSHING GASOLINE CO. CUTS

The Cushing Gasoline Co. with refineries in Blackwell and Cushing, Okla., met the price cut of the Champlin Refining Co. posted last week, quoting 32 gravity oil at 90 cents per barrel with a 3-cent differential for each degree to 44° and above which is quoted at $1.26.

High Spots in Field News

KANSAS

Ellsworth County well estimated at 1,500 bbls.

MISSISSIPPI

Jackson Field excited by oil show, 10 bbls. of 13 gravity.

SOUTHWEST TEXAS

Taylor marl wells in Bexar and Frio Counties attract attention.

NORTH LOUISIANA-ARKANSAS

Interesting shows in Hot Springs County, De Soto Parish, and Miller County.

OKLAHOMA

Oklahoma wildcatters active and discover new sources. Output held to 544,200 bbls.

WEST TEXAS

Southeastern Ward County and western Crane County hold interest in Permian Basin.

NORTH TEXAS AND PANHANDLE

New area on west side of Gray County most active in Panhandle. Burkett Pool well good for 366 bbls.

CALIFORNIA

Peak at Playa del Rey expected in November. Unit agreement tentatively reached on North Dome, Kettleman Hills.

GULF COAST

Semiwildcat on Barbers Hill, Chambers County, makes 1,600 bbls. through half-inch choke, subsalt production.

Third well at Moss Bluff, South Liberty County, makes 700 bbls.

ROCKY MOUNTAIN AREA

Greasewood Dome, Weld County, Colorado, well makes 300 bbls. and may drill itself in.

Hobbs Pool potential now 819,193 bbls. with allowable at 31,715 bbls. last half of month.

DONOVAN TO ADDRESS INSTITUTE ON STATUS OF ANTITRUST LAWS

Col. William J. Donovan, former assistant attorney general of the United States, will address the opening general session of the American Petroleum Institute's eleventh annual meeting at Chicago November 11. The session will be held in the grand ballroom of the Stevens Hotel at 2:30 p.m. Colonel Donovan's subject will be "The Antitrust Laws."

Colonel Donovan occupies the place on the program held last year by Sir Henri Deterding, head of the Royal Dutch-Shell oil interests. His topic is in sequence to Sir Henri's suggestion of an "association of co-operation," since it was the barriers of antitrust laws which blocked the way to a world agreement on conservation of petroleum resources through limitation of production. This plan, recommended by the Federal Oil Conservation Board, was brought virtually to completion by the institute, but was discarded when Attorney General Mitchell, in March, 1929, reminded the board it had no authority to approve any plan that might later be found to be in violation of the antitrust laws. The failure of the conservation scheme, which had brought virtually all the major oil interests of the world into a tentative agreement to hold the 1929 production of crude oil to the level of 1928, to gain approval because of the antitrust laws, served to focus public attention on these statutes, and for what probably was the first time raised a question as to the possibility of their being, in some respects at least, a hindrance to public welfare. During his term of office as assistant attorney general, Colonel Donovan was entrusted directly with the enforcement of these laws and he is widely regarded today as an authority on the subject.

Colonel Donovan's Career

Colonel Donovan is a soldier, as well as a lawyer. He was born in Buffalo January 1, 1883, and was graduated by Niagara and Columbia Universities. He began the practice of law in 1907, became counsel for the New York State Fuel Administration, and in 1922 was appointed United States district attorney for the Western District of New York, an office he held until 1924. In that year he was appointed assistant attorney general of the United States and from March, 1925, until 1929 served as assistant to the attorney general. He was a representative of the United States on the Rio Grande Compact Commission and Boulder Canyon project, and a member of the delegation representing the United States in the 1923 conferences with Canada relative to customs regulations.

His military experience constitutes a brilliant record which brought him world-wide fame. He served as captain of Troop 1, First Cavalry, New York National Guard. During the World War he became assistant chief of staff of the Twenty-seventh Division, A.E.F., and served also as major and brigade adjutant of the Fifty-first Brigade. He became successively major, lieutenant colonel and colonel of the 165th Infantry, the old Sixty-ninth New York, and was wounded three times in battle.

Colonel Donovan was awarded the Congressional Medal of Honor, the Distinguished Service Cross and the Distinguished Service Medal, one of the two

(Continued on Page 141)

SCORE SHEET ON OIL PRODUCTION

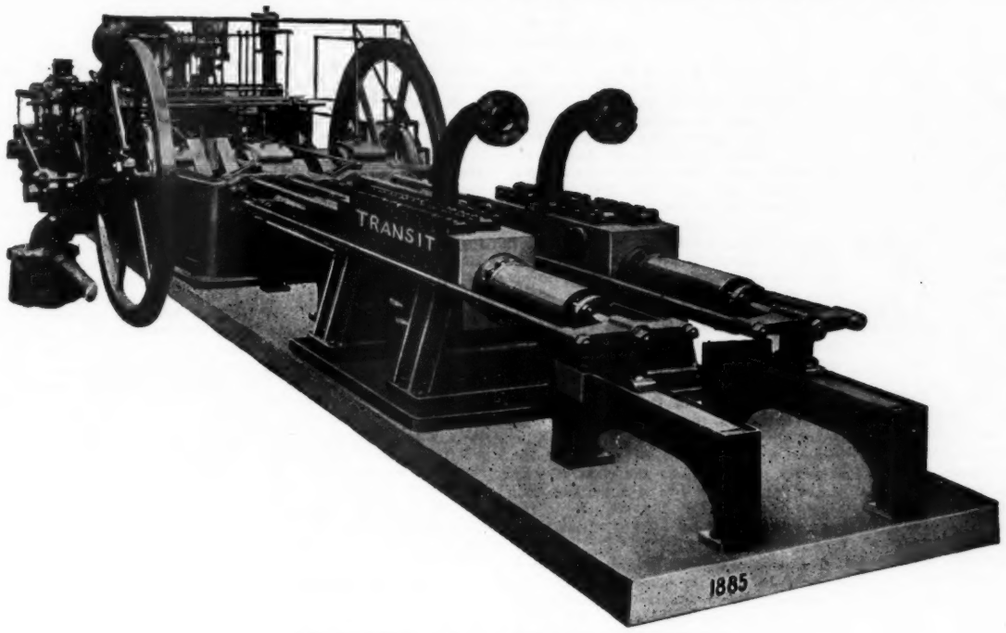
Below is shown allotted average daily production in the United States, April to December, inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending October 18:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
California	610,000	589,000	.....	21,000
Oklahoma	655,000	544,510	.....	110,490
Texas	750,000	780,388	30,388	.....
Other fields	480,000	454,663	.....	25,337
Total	2,495,000	2,368,561	30,388	156,827

Net daily average underproduction 126,439 bbls.

REFINERY ENGINEERS

all over the country are beginning to appreciate the worth of



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Flywheel Hot Oil Pumps

for cracking coil work.

These engineers demand steam economy and smooth operation with no jar on the coils.

They demand reliable operation so the run can be completed without pump trouble.

They demand perfectly safe pumping machinery, so that the refinery is protected against the demon, fire.

They demand perfect governing, perfect control.

Every demand and then some has been met by

TRANSIT FLYWHEEL HOT OIL PUMPS

And the speed possibilities—they might surprise you—and greater safe speed means smaller units, keeping the price down—maybe another surprise.

Put your plant in Competitive Condition by installing
TRANSIT FLYWHEEL HOT OIL PUMPS

Agents
FRICK-REID SUPPLY CORPORATION
Tulsa, Okla., or any store.
REPUBLIC SUPPLY COMPANY
of California
Los Angeles, California
E. L. WILSON HARDWARE CO.
Beaumont, Texas.

NATIONAL TRANSIT
Pump & Machine Co.
Oil City, Pa.

DISTRICT OFFICES
NEW YORK CLEVELAND PHILADELPHIA HOUSTON TULSA PITTSBURGH LOS ANGELES

Agents
F. C. RICHMOND MACHINERY CO.
Salt Lake City, Utah
REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.
PRATT-GILBERT CO.
Phoenix, Ariz.
WOODWARD, WIGHT & CO.
New Orleans, La.

Oklahoma Output Held to 544,200 Bbls.

Producers Continue to Curtail Output, but Wildcatters Are Active and Are Discovering New Sources

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's production shows a decline of approximately 5,000 bbls. a day for the week ending October 18, when the production was estimated at 544,200 bbls. a day.

The majority of the State's decline was in the Oklahoma City Field where production was held to a daily average of 88,466 bbls., production from a large number of wells having been held back on account of the lack of storage facilities. Nine wells completed in the main part of the pool had a potential of approximately 200,000 bbls. a day and the 15 completed were estimated to have a potential of 300,000 bbls. a day. More than a dozen locations were made on the west side of the pool, due to large producers in that area.

Four New Wells in Tatums Pool

The Tatums Pool in Carter County had four new producers during the week and was southern Oklahoma's most active area. The four completed wells had an initial production of 4,484 bbls. Several other tests were nearing completion.

C. L. Anderson's No. 5 Eaves, NW cor. NE SW, Section 24-1s-3w, flowed 1,600 bbls. the first 24 hours from a series of sands at 2,280-2,504 feet. Magnolia Petroleum Co.'s No. 1 W. Spigner, SE cor. NW, Section 24-1s-3w, swabbed 1,146 bbls. the first 24 hours from a series of sands at 2,257-2,509 feet. Same company's No. 2 W. Spigner, SW cor. SE NW, Section 24-1s-3w, made 966 bbls. on a 24-hour gauge from sand at 2,280-2,503 feet. Trevlyn Oil Co.'s No. 4 Spigner, SW cor. NW, Section 24-1s-3w, swabbed 772 bbls. the first 24-hour gauge, and has been shut down for the 16-day proration period and will be opened for production at the rate of 100 bbls. a day. The oil was found in sands at 2,312-2,525 feet. Wirt Franklin Petroleum Corp.'s No. 4 Mitchell, NE cor. SE SE, Section 24-1s-3w, was preparing to test the sand at 2,279-2,318 feet.

Important Discovery in Logan

One of the important finds of the week in the western part of the State was in Eason Oil Co.'s No. 1 Kotschar, SW cor. NE SW, Section 34-17-4w, Logan County, which many believe has opened a new producing area west of Guthrie. The well made 522 bbls. in 10 hours and 842 bbls. the next 21 hours. It was pinched to 30 bbls. an hour, with a back pressure of 40 pounds, after a pipe line connection had been made. It flowed 192 bbls. in five hours under the back pressure. The sand was found at 4,918-42 feet, the present total depth, but the test may be drilled slightly deeper. The Eason Oil Co. has approximately 400 acres surrounding the test. Other operators owning acreage in the vicinity may work out a unit plan of operation to develop the territory. Some of the leases are short time ones, and it is believed that under the unit plan an orderly drilling campaign can be worked out. On account of a few short-time leases some immediate development may be expected.

A One-Well Extension?

In the south extension to the East Earlsboro Pool, Amerada Petroleum Corp.'s No. 1 Chase, NW cor. NE SW, Section 29-9-6, may be the only producer in the area. The three offsets to the discovery well are believed to be running low on the structure using the Mayes lime as a marker, which is considered by many geologists to be a marker in the area. Some express the opinion that if the field extends in any direction, it in all probability, will be southeasterly, the discovery well being located in the northwest corner of the Amerada Petroleum Co.'s lease. The west offset is The Texas Company's No. 1 in the NE cor. NW SW, Section 29-9-6, which is believed to be running the highest of the group. It had the Mayes lime at 3,720 feet, which is about 75 feet lower than in the discovery well. The Gypsy Oil Co.'s No. 1 Pompey, SW cor. SE NW, Section 29-9-6, had the Mayes lime at 3,760 feet. The diagonal offset is the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Morris, finding the Mayes at 3,790 feet, which is estimated to be 100 feet lower than the formation found in the initial well. The discovery well is being produced wide open, and under the proration agreement will be allowed to produce without being pinched until an offset is completed in the area.

Town Lot Drilling

An extension to the oil drilling zone in the town lot sector of the south Oklahoma City Field will be asked by the property owners, along the right of way of the Santa Fe railway. A petition will be presented to the city council at the next regular meeting, by a group of property owners.

The zone extension program had been dropped by the city some time ago, but the oil activity is being revived inside the city limits by the completion of several of the largest producers in the Oklahoma City Pool, near the Santa Fe railway holdings.

A triangular strip of acreage bounded by the Santa Fe tracks, Santa Fe Avenue and Thirty-sixth Street south, is believed will be the first extension considered.

In the south end of the Oklahoma City Field a survey shows that only 15 tests were in operation and most of those drilling below 6,000 feet. Several of the older producers were being reconditioned with standard tools. Muddy roads during the week hindered the work of completing new wells. The lowlands in the north end of the pool were inaccessible and several new locations were also idle; indications were that the area would be idle for several days.

On the northeast edge of the Oklahoma City Field the producing sand is believed to have pinched out. Tom Slick Oil Co.'s No. 2 Townsend, NE cor. SE NW Section 1-11-3w, in the extreme northeast location, was only showing a small amount of oil after being bailed down 4,500 feet. The gas pressure was weak and it may be necessary to put the well on the air-gas lift before making it a commercial producer. The total depth of the well is 6,549 feet. It is the south offset to the same company's No. 1 Gleason, which is the most northeasterly producer in the field. The initial production of the Gleason well was 3,302 bbls. the first 16 hours. Production was extended on the extreme west side of the pool by the Indian Territory Illuminating Oil Co.'s No. 1 Lawrence Place, NW cor. NE Section 15-11-3w, which is estimated to be a 15,000-bbl. well. The gas volume was estimated at 20,000,000 feet. The well is near G Street, inside the city limits. A location is expected to be made on the acreage to the west which is divided into town lots. The fluid was bailed down 800 feet, and after that the washing in method was used. The sand clogged the flow lines which were later cleaned out and again opened allowing it to clean itself into the pits. The total depth of the well is 6,552 feet. It made a total of 1,479 bbls. the first hour.

Test in Kingfisher County

One of the interesting wildcat tests in the western part of the State is the Prairie Oil & Gas Co.'s No. 1 Wright, C NW SW Section 23-15-5w, Kingfisher County. The test had a showing of gas at 5,090 feet in lime and it was drilling deeper at 5,720 feet, in sandy shale. Many of the surrounding leases are short time ones and if the test should find commercial production it is believed a drilling campaign might develop.

Activity South of Perry

The area south of Perry in Noble County continues active and leads in development work in the north part of the State. The territory southwest of Perry appears to be very prolific in gas. It has gas sands ranging from 600 to 3,400 feet. Prairie Oil & Gas Co. and Empire Oil & Refining Co. completed wells during the week. Prairie Oil & Gas Co.'s No. 1 Snyser, NE cor. SE, Section 5-20-1w, Noble County, is the seventh producer completed. The well made 12,000,000 feet of gas from sand at 3,411-18 feet. Empire Oil & Refining Co.'s No. 1 Freyer, NW cor. NE, Section 4-20-1w, was completed and shut in. It had an initial production of 31,000,000 feet of gas at 3,416-25 feet. The next test due to be completed in the area is the Twin State Oil Co.'s No. 1 Trussell, NE cor. SE, Section 5-20-1w. It was expected to land casing at 3,412 feet. Barnsdall Oil Co.'s No. 1 Mitch, NW cor. SW, Section 12-21-1, a wildcat east of Perry, was lowering the 12-inch casing at 2,040 feet, the total depth is 2,150 feet.

Considerable drilling is in progress in Noble County and some of the older producing wells near the Tonkawa Field are being drilled deeper. Acreage is being assembled which may result in further drilling activity. Continental Oil Co.'s No. 1 Lavington, SE cor., Section 32-21-1w, Noble County, southwest of Perry, was drilling at 3,200 feet. Magnolia Petroleum Co.'s No. 2 Weeder, NE cor. NW, Section 22-21-2w, was rigging up standard tools at a total depth of 4,980 feet. Same company's No. 1 Woollosen, SE cor. NE NE, Section 21-21-2w, was drilling at 3,960 feet. Washoma Petroleum Co. and others' No. 1 Otoe Indian Allotment, NE cor., Section 22-22-1, is a location. Prairie Oil & Gas Co. and others' No. 1 Roubedous, SW cor. NW, Section 22-22-1, is shut down after building a road and slush pits.

Prairie Oil & Gas Co. and others' No. 1 Wentz, NW cor. SW, Section 22-22-1, an old producer, is flowing 100 bbls. a day through 2-inch tubing from the Layton sand at a total depth of 3,380 feet. Magnolia Petroleum Co.'s No. 2 Young, NE cor. NW NW, Section 22-22-2w, is flowing 700 bbls. a day with the production pinched, from the Misener sand at 5,100-05 feet. The only offset producing is the same company's No. 4 Sams, SE cor. SW SW, Section 15-21-2w, which is making 250 bbls. a day on the pump, after plugging back in the Misener sand at 5,185 feet, the total depth being 5,195 feet. The Oil State Corp. and others' No. 1 Frederick, SW cor. NE, Section 2-24-1w, southwest of Tonkawa, was preparing to land 5-inch casing at 2,500 feet, and the Tonkawa sand series was expected at 2,650 feet. Fugatt, Neber and Smith's No. 1 Reed, SE cor., Section 20-24-1w, is to be drilled deeper to the lower Tonkawa. Blair Brothers have assembled a large block of acreage in the eastern part of Noble County, the tracts being located in Sections 12-22-2, 13-22-2, 14-22-2, 23-22-2, 24-22-2, 25-22-2, 35-22-2, and 36-22-2. The acreage is expected to be core drilled.

Showing in Township 9-11

The wildcat test of the Mid-Kansas Oil & Gas Co. in the northeastern part of Hughes County, about 10 miles south of the old Spring Hill production in Township 11-11, Okfuskee County, is attracting considerable attention. A showing of oil was found in the Wilcox sand at 3,990-91 feet, where the 5-inch casing will be landed and the test drilled deeper. The well is No. 1 Eason, NE cor. SW SW Section 6-9-11, and the top of the Wilcox sand was found at 3,972 feet. Several shallow pools have been found in the western part of Hughes County, but little oil has been found on the east side of the county.

The Texas Company's No. 1 Knight, SW cor. SE Section 3-8-3, a wildcat in Pottawatomie County, found the Wilcox sand at 5,395 feet, with salt water. The test may be abandoned.

Stephens County Activity

Rainy weather delays new activity in the Comanche area in Stephens County. Two new operations were started around Pace and others' No. 1 Dilley, in Section 27-2s-7w, which opened up a new producing area by swabbing 300 bbls. in 36

(Continued on Page 117)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft. shut down.

BECKHAM COUNTY

Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Rig; rotary tools.
Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Shut down 3,784 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,606 ft.
White et al's No. 1 Green, SW cor. Sec. 24-10-24w	Shut down 1,320 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 3,805 ft.; set 6-in. csg.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-11w	Shut down 1,090 ft.
Simms Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Drlg. 2,095 ft.

CHEROKEE COUNTY

Weaver & Proctor's No. 1 Benge, NE SE Sec. 8-14-21	Shut down 510 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Shut down 6,518 ft.

COAL COUNTY

Western Oil Co.'s No. 1 Gum Bros., C SW NW Sec. 30-3-10	Rig.
A. M. Van Orden's No. 1 Jamison, SE SW Sec. 31-1-9	Shut down 1,668 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 4,300 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 3,030 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w	Rig.
Choate Oil Co.'s No. 1 Pomwalt, SW NW Sec. 11-2-10w	Shut down 1,709 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 2-3-9w	Shut down 1,450 ft.

(Continued on Page 149)

Dubbs cracking gives a big yield of gasoline from the cheapest charging stocks—gasoline that is outstanding in any market

Only the best gasoline counts in these days

Skimming gives a smaller yield of inferior gasoline from expensive crude oil

The logic is plain

Run less crude and Dubbs-crack more

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Ellsworth County Holds Attention

Well That Looks Good for 1,500 Bbls. per Day Stamps Area as Most Promising. Other Wildcat Discoveries

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas production declined to an estimated 112,500 bbls. a day for the week ending October 18, which is approximately 3,000 bbls. a day less than the previous week. Most of the decline is believed to be in the Voshell Pool, in McPherson County, where little development has been in progress during the last few weeks.

Western Kansas continues in the limelight with new wildcat tests finding production and opening new pools. The future supply of oil in Kansas is believed to be assured from the discovery of recent wells in the western part of the State.

Oil in Ellsworth County

The wildcat test of Slick, Pryor & Lockhart and Darby Petroleum Corp. and others, No. 1 Heiken, in Section 25-17-10w, Ellsworth County, is now estimated at 1,500 bbls. a day. It was at first believed that the test was only a small well, but deeper drilling increased the flow, putting Ellsworth County in the producing column. The test was drilled into the Silicious lime at 3,221-34 feet, where it swabbed 5 bbls. an hour. After this disappointing showing the owners drilled the well deeper into the Silicious lime to 3,243 feet where the oil rose to the top of the hole and flowed over the derrick in a few minutes. The pay horizon was found from 3,240-43 feet. In the first swabbing it made 68 bbls. the first hour and in the next two hours it made 147 bbls., and in three hours it tanked 215 bbls. It was then shut in for lack of storage. Some estimated the flow as high as 75 bbls. an hour. The tankage on the lease has only a capacity of 1,000 bbls. The well was drilled on a block of 16,600 acres of leases and is one of the important discoveries in western Kansas this year.

The geology of the area was determined from core drilled holes drilled to a depth of 400 to 600 feet. The structure is believed to be the surface expression of the anticline on the Russell-Barton Arch, which is a Silicious lime folding extending from the Gorham Pool southeast into Rice County. From data now available some believe production may be found in the formations above the Silicious lime. Oil may also be found on the flanks of the structure in some of the same horizons now producing gas in the discovery well. Like the Eldorado Field the Mississippi lime has been removed in this area either by erosion or by a condition that prevented its being deposited there. The well found the Silicious lime approximately 80 feet higher than the Shell Petroleum Corp.'s No. 1 Ploog, in Section 33-18-9w, Rice County, to the southeast.

Ritz Pool Potential

The potential output of the Ritz Pool in McPherson County is 15,051 bbls. according to the gauges of T. C. Johnson, the umpire, from 14 wells. The pipe line outlet for the pool during the October period is expected to be 6,268 bbls. a day, which is an increase over the previous 30 days which showed an average of 4,692 bbls. a day. The following are the potential gauges of the different leases:

Company, lease—	No. wells	Bbls.
Dixie-Amerada, Flook	2	1,665
Lario, Ritz	1	480
Palmer-Phillips, Winn	1	3,120
Shell, Holmes	1	10
Shell, B. H. Koehn	1	102
Shell, J. B. Koehn	1	198
Shell, Miller	1	3,335
Shell, Ritz	3	303
The Texas Company, Munn	3	5,838
Total	14	15,051

Northeast of the Ritz Pool, in McPherson County, two wildcat tests were announced during the week. Both are on core-drilled structures. Henderson & Holden and others' No. 1 in the C NE SW, Section 23-19-1w, is located on a block of 3,000 acres, after a core-drilling test. The other location was announced by United Petroleum Corp. and Darby Petroleum Corp. for No. 1 in the NE cor., Section 20-19-1w. It is located on acreage owned by the Shell Petroleum Corp. and was farmed out for a test well. Some express the opinion the same trend of flooding exists in this area as in the Ritz Pool.

New Test for Saline County

A new wildcat test was announced in H. C. Detrick and others' No. 1 Sudendorf, NE cor. SE, Section 30-14-2w, Saline County. The test is expected to be drilled to 3,500 feet. It is located about 2 miles northeast of the Dixie Oil Co.'s test in Section 6-15-2w, which had a show of oil and was abandoned. Another test drilled in Section 29-14-2w was reported to have had a 50-bbl. showing in the Simpson sand at 3,265 feet.

Gas in Kingman Test

Gas was found in a Kingman County wildcat test and indications were promising for deeper production. Operators were watching the wildcat test of the Skelly Oil Co.'s No. 1 Miles, NE cor., Section 30-27-10w. It found what was estimated to be 2,000,000 feet of gas at 2,000 feet. After drilling deeper to a total depth of 2,015 feet the gas increased to 6,000,000 feet, and from 2,015-20 feet the gas again increased to 7,000,000 feet. The gas is flowing through a 10-inch hole. The 10-inch casing was landed at 1,948 feet. Gas was also found in the test at 1,680 feet which was bradenheaded and is being used for fuel. The test is located on a 10,000-acre block and is regarded as having excellent chances of finding production.

Heavy Oil in Rooks County

Rooks County wildcat test swabbed 301 bbls. the first 15 hours from sand at 3,242-45 feet. It is the heaviest oil ever found in western Kansas, testing 25 degrees gravity, corrected. The well is Boyson & Seeley's No. 1, in the C NE, Section 21-8-19w. The well was shut down awaiting a pipe line connection. The nearest production is in the Johnson Pool, 25 miles to the south in Ellis County. The new well is the most northern oil well ever found in the State, it being only 40 miles south of the Nebraska state line. The oil found in the wildcat test is similar to that of southeastern Kansas in shallow wells.

The Liberal Oil & Gas Co.'s No. 1, in the C N half NE, Section 2-35-34w, Seward County, in the southwestern part of the State, is rigging up standard tools at a total depth of 2,650 feet, after landing the 8-inch casing. Operations will be shut down waiting for cement. Gas production is expected at 2,700 feet. The test has been logging about the same as other gas wells drilled in the Hugoton gas field in Stevens County.

The wildcat test of Heyburgs and others, No. 1 Kroft, SE cor. SW SE, Section 8-32-8, Coffey County, has resumed drilling at 670 feet after being shut down for water. The test will be drilled to the Mississippi lime unless oil or gas is found at a lesser depth.

In Wichita Area

The possibility of extending the Simpson sand production in the Eastborough Pool in Sedgwick County was promising when the Producers & Refiners Corp.'s No. 1 Turner, NW cor. SE Section 30-27-2, Sedgwick County, found a showing of oil at 3,325 feet. The oil is showing through a hole full of water which was found in the Viola lime at 3,271-75 feet. The 5-inch casing was landed on top of the oil showing preparatory to drilling deeper. It is located a half mile south of the discovery Simpson sand well in the pool.

A quarter mile north of the Producers & Refiners' test, Vickers Petroleum Co. and others' No. 4 Keys, NW cor. SW NE Section 30-27-2, found only a show of oil in the chat but no water at 3,056-58 feet. Oil rose 200 feet in the hole in a few minutes. The test was drilling deeper at 3,095 feet.

On the east side of the pool, Derby Oil Co.'s No. 2 Rimel, NE cor. Section 30-27-2, had water in the chat at 3,013 feet. The test is reamed preparatory to drilling to the Simpson sand.

In the north end of the pool the National Refining Co.'s No. 1 Murdock was pumping 480 bbls. a day. The well is a half mile extension to the north and has resulted in several other tests being drilled. The pool had a total of 13 tests drilling on October 17.

Russell County Activity

Russell County has considerable wildcat activity and some of the tests are nearing the pay horizons. Empire Oil & Refining Co.'s No. 1 Sherwood, in the NW of Section 21-14-13w, was drilling below 780 feet. It is the first test for oil to be drilled in that part of the county, and is several miles from any other production. The same company's No. 1 Dillner, in Section 35-13-15w, was drilling at 2,500 feet. It was the west offset to the discovery well in the vicinity which was a wildcat.

Signal Oil Co.'s No. 1 Sellens, in Section 26-15-13w, in the southern part of the county, was drilling at 2,220 feet. The wildcat test of Gilbreath and others, C NE Section 33-11-13w, was shut down 2,155 feet. The Texas Company is drilling another test in the south Fairport Pool, in Section 1-13-16w, and was drilling at 555 feet. In the Gorham Field Allison & Fitzwilliam's No. 1 in Section 8-14-15w, was drilling at 3,245 feet.

Butler County

Brown and others' No. 1 Robinson, SE cor. NW, Section 6-24-4, is shut down at 200 feet. National Refining Co.'s No. 1 Hedderman, SW cor. NE, Section 24-28-5, is drilling deeper at 2,915 feet.

Chautauqua County

Griffin & Bell's No. 8 Oliver, CSL SE SW, Section 1-32-10, has been completed for 50 bbls. in sand 1,638-64 feet.

Coffey County

Roberts and others' No. 1 Hay, SW cor. SE NW, Section 32-22-15, has been abandoned at 1,125 feet.

Cowley County

Roth & Faurot's No. 1-A Brant, SE cor. SW NE, Section 12-32-4, is dry and abandoned at 780 feet. Hall and others' No. 1 Jarvis, C NW SW, Section 19-33-6, is dry and abandoned at 703 feet.

Dickinson County

Morgan and others' No. 1 Whitehair, NW cor. SE, Section 9-12-1, has been abandoned at 3,340 feet.

Ellis County

Phillips Petroleum Co.'s No. 1 Karlein, NE cor. SE, Section 6-12-17w, has been completed for 280 bbls. in sand 3,710-12 feet.

Ellsworth County

Aladdin Petroleum Corp. and Hershey and others moved in tools for No. 1 Stottenberg, C SW, Section 22-16-10w.

Greenwood County

Mendenhall and others' No. 1 Pusey, SW cor. NW SW, Section 4-25-13, is a machine. O'Neil and others' No. 3 Hess, NE cor. NW, Section 34-22-11, has been abandoned at 1,968 feet. The Prairie Oil & Gas Co.'s No. 8 Newhouse, CEL NW NE, Section 1-24-11, has been completed for 48 bbls. at 1,798 feet after plugging back from 1,803 feet, top of sand 1,784 feet.

Harvey County

Alco Royalty Co. and others made location for No. 1 Hiebert, NE cor. SE SE, Section 5-22-3w. Shell Petroleum Corp. and McPherson Oil & Gas Development Co.'s No. 1 Houry, SW cor. NE SW, Section 11-23-2w, is preparing to deepen from 2,955 feet.

McPherson County

Henderson & Holden's No. 1 Sommerfield, NE cor. SW, Section 23-19-1w, is moving in tools. Dixie Oil Co. and Amerada Petroleum Corp. staked location

(Continued on Page 126)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Company, farm and location— Remarks:
Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w. Fishing 4,487-4,508 ft.; 20,000,000 ft. gas; T. D. 4,528 ft.; comp.

BARTON COUNTY

Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w.... Rig.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w.. Shut down 1,600 ft.

BUTLER COUNTY

National Ref. Co.'s No. 1 Settergren, NW cor. Sec. 32-26-4. Drlg. 2,645 ft.
McCulloch and Empire's No. 1 Lilley, SW NW NW Sec. 23-23-5 ..... Drlg. 1,030 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 13-28-7 ..... Shut down 830 ft.

CLARK COUNTY

Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w ..... Drlg. 6,810 ft.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2 ..... Shut down 1,810 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14 ..... Drlg. 310 ft.
McGregor's No. 1 Wood, NE NW SW Sec. 20-22-15 ..... Shut down 650 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15 .... Drlg. 1,125 ft.

COWLEY COUNTY

Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8 .. Fishing 912 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4 ..... Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2 .... Drlg. 2,410 ft.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1 ..... Shut down 3,340 ft.

DOUGLAS COUNTY

Steinbuckle's No. 1 Unknown, SW NE NW Sec. 34-14-21.. Shut down 1,100 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w ..... Fishing 3,916 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Shut down 3,805-3,830 ft.; water.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10 ..... Drlg. 2,230 ft.
Croft & Frazier's No. 1 Keys, SE NE Sec. 26-31-10 ..... Abandoned 1,540-65 ft.; shot 120 qts.; show oil; T. D. 1,989 ft.

ELLSWORTH COUNTY

Aladdin Pet's No. 1 Stoddenberg, C SW Sec. 22-16-10w.. Rig on ground.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w ..... Shut down 125 ft.
Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w ..... Drlg. 590 ft.
Slick et al's No. 1 Hecken, NW cor. Sec. 25-17-10w .... 3,000,000 ft. gas 2,980-91 ft.; 3,221-25 ft. 3,000 ft. oil in hole; S. D.

(Continued on Page 146)

Two major oil companies now have proved the value of Customer Ownership —

THE OIL INDUSTRY has recently witnessed the amazing results obtained, in two weeks time, by the second major oil company which has undertaken to broaden its ownership and to obtain new customers — *through the use of "Customer Ownership."*

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**Names furnished upon request. Write for 32-page book "Customer Ownership."*

Customer Ownership Division

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72 WALL STREET NEW YORK

New Area Southeast of Hobbs Pool

Gas and Oil Found in Sundance in Lance Creek, Eastern Wyoming. Test on Geary Dome, Natrona County

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Oct. 20.—Some good drilling territory southwest of production on the southeastern end of the Hobbs Pool in Lea County, New Mexico, was opened up when The Texas Company's No. 2 McKinley, one-fourth of a mile ahead of production, was completed as a 9,817-bbl. well. One new location to the west was made by the Continental Oil Co. and will call for three offsets. Two other completions were reported and 10 wells are waiting for proration tests. One of the last named, the Tidal Oil Co.'s No. 3 Grimes, made 17,623 bbls. on a company test. The Tidal Oil Co.'s No. 1 Coleman, in the Eunice area, made 1,215 bbls. in 24 hours after being plugged back and shot. Lockhart & Co.'s No. 2-X Parke, in Eddy County, was completed as a 134-bbl. well. The Kutz Cannon Oil & Gas Co. has a gas well in the Kutz Canon district in San Juan County, which extends the gas area 3 miles.

The Platte Valley Petroleum Co.'s discovery in Weld County, Colorado, out in the plains district, which opens great possibilities for that region, continues to be the outstanding development in that State. The Continental Oil Co. completed a 30-bbl. well in Fremont County and abandoned its Pennsylvanian test in Larimer County. The Reliance Oil Co.'s Pennsylvanian test, west of Lyons in Boulder County, was abandoned in granite wash at 2,320 feet and the Standard Oil Co. of Colorado had an excellent show of gas at 238 feet in Archuleta County near the New Mexico line.

Gas and oil has been found in the Sundance formation in Lance Creek, Niobrara County, eastern Wyoming, by the Ohio Oil Co. in the first test to that horizon. A small completion and four new locations were reported in the Osage Field. Location has been made for the Geary Dome test in Natrona County, and the Midwest Refining Co. is abandoning its Grays River wildcat in Lincoln County. Possibility of a further curtailment of black oil production in the Big Horn Basin is rumored.

NEW MEXICO

Hobbs Pool—Lea County

Only one new location was reported in the Hobbs Pool this past week, this being the Continental Oil Co.'s No. 1-C State, C NW SE Section 5-19-38, the footage being 1,980 feet from the south and east lines. This is an outside location on the southwestern side of the structure and will call for three offsets, one on the north by the Sun Oil Co. and one on the west and another on the northwest by the Midwest Refining Co.

There were three completions, one of which was an outside well and proved some additional territory. The Texas Company's No. 2 McKinley, C NE SE Section 5-19-38, one-fourth of a mile west of its No. 1 McKinley, the nearest producer, was given a potential of 9,817 bbls. of oil and 6,960,000 feet of gas from the pay at 4,100-50 feet. The size of this well, which is on the southwestern side of the pool, indicates there is some good drilling territory to the west and several wells are scheduled to be spotted, the first location having been made in the Continental Oil Co.'s No. 1-C State. No. 2 McKinley was drilled to 4,175 feet and the 3-inch is at 4,160 feet.

The Gypsy Oil Co.'s No. 6 Grimes, SE cor. SW Section 32-18-38, an inside location, was completed at 4,166 feet. The top of the pay was at 3,985 feet and the 3-inch tubing was run to 4,158 feet. It was given a potential of 9,493 bbls. of oil and 10,000,000 feet of gas.

The Continental Oil Co.'s No. 2-B State, NW cor. SW Section 33-18-38, was completed at 4,179 feet with the 3-inch at 4,138 feet. It made 51.3 bbls. in an hour through the tubing and was rated at 1,644 bbls. per day open flow.

Several wells are in the pay and have been drilled to completion depth, but have not yet been given an official proration test. The Tidal Oil Co.'s No. 3 Grimes, NE cor. SE Section 29-18-38, was drilled to 4,190 feet. It topped the pay at 4,035 feet and is shut in for proration test. On a company test it was rated at 17,623 bbls. of oil and 15,000,000 feet of gas.

Widens Area

The Texas Company's No. 3 McKinley, C SW SW Section 4-19-38, was drilled to a total depth of 4,175 feet and is being given a test to determine its proration rating. The 3-inch tubing is at 4,155 feet. This well is half a mile south and three-fourths of a mile west of the nearest producers and means a widening out of the productive area on the southeastern end of the structure.

The Ohio Oil Co.'s No. 5 State-Northrup, SW cor. SE Section 32-18-38, joint with the Independent Oil Co., gauged 289 bbls. the first hour, open flow, from a total depth of 4,176 feet, and averaged 378 bbls. per hour in a six-hour test. The top of the pay was at 3,975 feet and it is waiting for proration test.

The Ohio Oil Co.'s No. 3 State, NW cor. SW Section 30-18-38, gauged 318 bbls. in one hour on a company test and is estimated at 5,000,000 feet of gas from a total depth of 4,208 feet. It is shut in for proration test. The top of the pay was at 4,095 feet and the 3-inch is at 4,108 feet.

The Midwest Refining Co.'s No. 26 Terry, C SE SE Section 9-19-38, which is close to the edge on the southeastern end of the field, is waiting for proration test at a total depth of 4,165 feet. It made 500 bbls. in 17 hours on a company test. The 2½-inch was run to 3,901 feet.

The Midwest's No. 6 McKinley, NW cor. Section 5-19-38, is being tested at a total depth of 4,202 feet. The 3-inch tubing is at 3,986 feet.

The Continental Oil Co.'s No. 3-B State, C N half N half SW Section 33-18-38, an outside well, one-fourth of a mile east of the nearest producer, is ready to be tested at a total depth of 4,192 feet. The tubing is at 4,111 feet.

The Continental's No. 3-A State, NE NW SE Section 29-18-38, made 930 bbls. in one hour on a company test from the lime at a total depth of 4,208 feet. The tubing is at 4,169 feet. The gas is estimated at 20,000,000 feet a day.

The Continental's No. 2-A State, SE cor. SW Section 29-18-38, is ready to be tested at a total depth of 4,184 feet with the 3-inch at 4,139 feet. It is estimated at 50 bbls. per hour and 4,500,000 feet of gas.

Drilling Operations

Routine operations include the following:

The Amerada Petroleum Corp.'s No. 3-B State, SE NW NE Section 29-18-38, cemented 9⅝-inch at 2,776 feet. It topped the salt at 1,695 feet and bottomed the salt at 2,560 feet. Same company's No. 4-B State, NE cor. NW Section 29-18-38, is drilling at 1,930 feet in salt. It topped the anhydrite at 1,580 feet and the salt at 1,690 feet.

Atlantic Oil Producing Co.'s No. 1 Grimes, SW cor. SE Section 20-18-38, is coring at 4,031 feet in lime. It started coring at 3,965 feet.

The California Co.'s No. 3 State, SE cor., Section 29-18-38, is drilling at 3,945 feet in lime and its No. 4 State, SW cor. SE, Section 29-18-38, is drilling at 3,876 feet in lime. Same company's No. 1 McKinley, C S half S half NW, Section 20-18-38, is bottomed at 4,041 feet and cemented 7-inch at 4,027 feet.

Empire Gas & Fuel Co.'s No. 3 Hardin, SE NE NW, Section 19-18-38, spudded on October 7 and is drilling at 110 feet in the red beds and its No. 3 Fowler, SW cor. NE, Section 31-18-38, spudded on October 4 and is drilling at 1,236 feet in the red beds.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, is shut down at 4,206 feet in lime and anhydrite.

Humble Oil & Refining Co.'s No. 1-A State, NE cor. SE, Section 25-18-37, cemented the 7-inch at 3,977 feet, and its No. 2-A State, SE cor., Section 25-18-37, cemented the 12½-inch at 213 feet. Same company's No. 10 Bowers, NE NW SW, Section 29-18-38, is drilling at 3,865 feet in lime and anhydrite and had 60,000,000 feet of gas at 3,678-80 feet. Humble's No. 1 Grimes, SW NE NE, Section 29-18-38, cemented 7-inch at 4,045 feet in lime. It had the first oil at 3,220-40 feet.

Mid-Continental Oil Co.'s No. 1 Fowler, NE NW NW, Section 31-18-38, spudded on October 5 and is drilling at 105 feet in the red beds.

Midwest Refining Co.'s No. 26 State, C SE SW, Section 4-19-38, is drilling at 3,158 feet in anhydrite and had a show of gas at 2,905-10 feet, and its No. 1 McKinley, NE cor. NW, Section 5-19-38, is drilling at 3,885 feet in hard lime and had a show of gas at 3,683-99 feet. Same company's No. 29 Turner, C SW SW, Section 34-18-38, is drilling at 2,750 feet in anhydrite.

Ohio Oil Co.'s No. 4 State, has changed its location from SE SW SW, Section 30-18-38, to the SW SW SW of the same section, one location to the west. It is building rig.

Prairie Oil & Gas Co.'s No. 2 Selman, SW cor. NE, Section 15-19-38, is an abandoned location. It was on the edge in the southeastern part of the pool.

Shell's Operations

Shell Petroleum Corp.'s No. 2 Berry, NW cor. SE, Section 31-18-38, is drilling at 1,260 feet in the red beds, and its No. 1-B McKinley, C N half N half SW, Section 20-18-38, cemented 7-inch at 4,025 feet. Same company's No. 2-B McKinley, SE cor. SW, Section 20-18-38, cemented 7-inch at 3,985 feet in lime, and its No. 8 McKinley, C N half N half SE, Section 19-18-38, is drilling at 1,425 feet in red rock.

Skelly Oil Co.'s No. 2 Fowler, SE cor. NW, Section 31-18-38, spudded on October 2 and cemented 12½-inch at 207 feet.

Sun Oil Co.'s No. 2 McKinley, C SE NE, Section 5-19-38, cemented the 7-inch at 3,950 feet and is drilling at 3,995 feet, and its No. 3 McKinley, NW cor. NE, Section 5-19-38, is drilling at 3,750 feet and had the first oil at 3,122 feet.

Texas Pacific Coal & Oil Co.'s No. 2-G State, NE cor. SE, Section 24-18-37, is bottomed at 4,208 feet and drilling by six joints of 3-inch tubing after cementing the whipstock at 3,906 feet.

Tidal Oil Co.'s No. 4 Grimes, SE cor. NE, Section 29-18-38, spudded on October 9 and is drilling at 541 feet in the red beds, and its No. 2 Hardin, SW SE NE, Section 19-18-38, is drilling at 1,840 feet in salt. Last named topped the anhydrite at 1,535 feet and the salt at 1,700 feet. Same company's No. 3 Hardin, SW NW NE, Section 19-18-38, is drilling at 1,595 feet in anhydrite. The top of the anhydrite was at 1,565 feet.

Vacuum Oil Co.'s No. 1 Berry, NE cor. SW, Section 31-18-38, spudded on October 1 and is drilling at 100 feet in the red beds.

Eunice Area—Lea County

Tidal Oil Co.'s No. 1 Coleman, SW cor. NE, Section 17-21-36, in the Eunice area responded favorably after being shot with 175 quarts at 3,900-56 feet and put 1,215 bbls. of oil into the tanks the first 24 hours. It averaged 1.112 bbls. daily on a four days' test and is now being cleaned out. It was drilled to 4,147 feet and plugged back to 3,968 feet. It is half a mile to the northeast of the Continental's No. 1 A. E. Meyers, the discovery well in the pool. Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, in the same area, but a separate pool, was plugged back from 3,900 feet to 3,885 feet and cemented the 7-inch at 3,813 feet. Continental Oil Co.'s No. 1 William Meyers, SW cor. NW, Section 28-22-36, which was held up for months at 3,750 feet with a bad fishing job, has reached old bottom and is ready to run pipe at 3,752 feet.

Cooper Area—Lea County

Texas Pacific Coal & Oil Co.'s No. 1 State, SE cor. SW, Section 22-23-36, in the Cooper area, has been recompleted at 3,560 feet as a 7,000,000-foot gas well after plugging back from 5,095 feet. It was shot at 3,560, 3,530, 3,275, 3,155 and 3,115 feet.

Lovington Area—Lea County

Galt, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, is drilling at 995 feet in the red beds and carrying 12½-inch. The 15½-inch is at 798 feet.

Eddy County

Lockhart & Co.'s No. 2-X Parke, NE NW NW, Section 23-17-30, Maljamar area, was completed at 3,419 feet and made 134 bbls. of oil and 2,500,000 feet of gas the first 24 hours. The elevation is 3,619 feet. The top of the salt was at 430 feet and the pay was at 3,405-19 feet. Getty Oil Co.'s No. 6 Dooley, C NW NW, Section 24-20-29, Twin Mounds, a deep test, spudded on October 3 and is drilling at 285 feet in the red beds.

Otero County

R. H. Ernest and others' No. 1 Located Land Co., 330 feet west of east line and 330 feet north of south line of Section 20-25s-7e, drilling in brown shale at 905 feet, carrying 12½-inch pipe.

Valencia County

Thomas B. Harlan and others' No. 2 Harlan Ranch, NE cor. NW, Section 5-6n-2e, is drilling at 1,760 feet in second hole.

Rio Arriba County

Governador Dome Oil Co.'s No. 1, SE. Section 15-29-7w, is drilling at 365 feet in the Farmington formation.

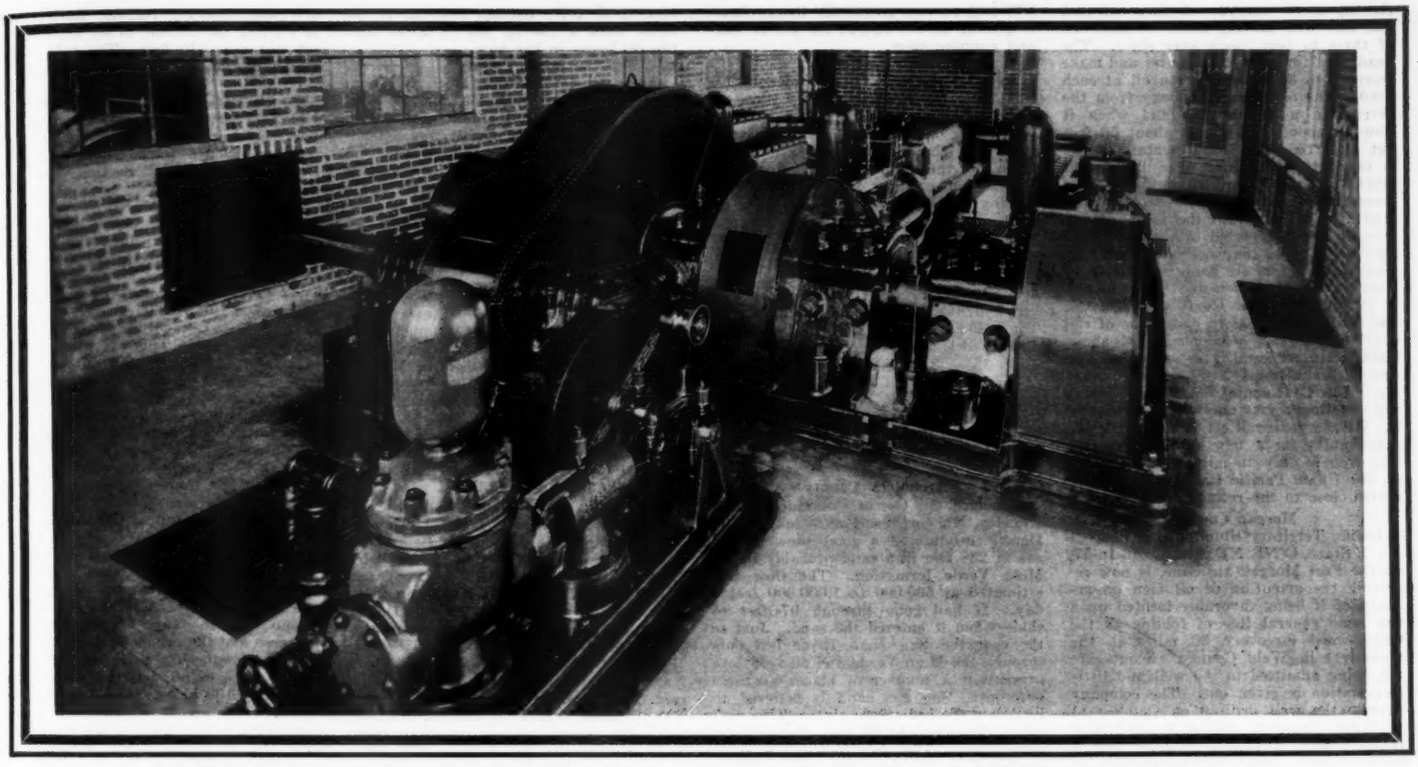
San Juan County

Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, in the Kutz Canon district, came in unexpectedly at 2,016 feet as a gas well after the drillers had quit work for the day. It is on top of a sand in the Picture Cliff formation. The sand is estimated 100 to 150 feet thick and the gas is being killed to drill in. The well extends the gas area about 3 miles. Some time ago the Southern Union Gas Co. was negotiating for this operation, but the deal did not go through and the company resumed drilling on its own account. Continental Oil Co.'s No. 24, SW NW, Section 1-29-19, Rattlesnake, is drilling at 2,400 feet.

COLORADO

Weld County

The discovery in the Platte Valley Petroleum Co.'s No. 1 Patterson, NE SW SW, Section 24-6n-61, on the Greasewood Dome in Weld County, continued to hold first place in the news though there have been no further developments since the well came in on October 10 at 6,642 feet just above the Muddy sand of the Dakota series. The hole was bottomed in shale when it came in throwing oil over



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the top of the derrick. It then subsided and has been making heads at intervals of three to four hours ever since. The heads last for 15 to 22 minutes and make from 10 to 30 bbls. of green oil at each head. The oil is carried away from the derrick in a 4-inch pipe and when it flows it shoots the stream about 50 feet out from the pipe. Continental Oil Co. is completing the first of a battery of 500-bbl. tanks. The boilers have been moved back and preparations are being made for drilling into the sand. However, it is not expected this will be done until the first of the week. In the meantime the directors are holding meetings in Fort Morgan to determine future plans. It is understood the Continental Oil Co. has made a proposal to drill some of the company's acreage of which it holds about 8,000 acres. The oil is very good quality and tests run from 42 to 44 degrees gravity. The Continental company is building a refinery just north of Denver and the Greasewood well offers it a favorable opportunity for a new supply of crude. The well is only 10 miles from Orchard on the Union Pacific Railroad which operates close to the refinery.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, on the Fort Morgan anticline, is now receiving the attention of oil men on account of it being favorably located upon the same general line of folding as the Greasewood discovery 30 miles to the northwest in Weld County. Scouts are not being admitted to the well and little information is given out. The company reports the well drilling on October 11 at 3,360 feet. It is on a local high mapped with a torsion balance and a magnetometer under the supervision of Dr. C. A. Heiland, of the Colorado School of Mines. This work was checked by the Indian Territory company's geophysical staff. It is generally expected this well will reach the Dakota at somewhere from 1,200 to 2,000 feet shallower depth from the surface than the Greasewood well.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, which has been held up at a total depth of 5,392 feet for several months with the tools in the hole and some collapsed 6¼-inch pipe, has finished swedging and ran a string of tools to test the condition of the hole. It succeeded in reaching the top of the tools, but no attempt was made to fish them out pending the arrival of certain equipment. The hole is standing full of water. Hydraulic jacks were put on the 6¼-inch and it was raised 7 inches to cut off a shoulder at the top and put on a stronger one. When the torch was ignited, the gas coming through the column of water was sufficiently strong to catch fire and burn several feet over the top. At 4,228 feet the hole was believed to be in the base of the Niobrara.

Larimer County

Continental Oil Co.'s No. 1 Hoffman, SW NE, Section 23-4n-70, on the Deininger Dome, which was started as a test of the Pennsylvanian formation, was dry and abandoned at 1,510 feet. It had not reached the Pennsylvanian at 1,250 feet, the original contract depth. The same company's No. 3 Scott, SW SE, Section 6-9-68, Wellington Dome, which is being deepened from the Muddy sand to test the Lakota, is standing cemented at 4,585 feet, below the Dakota and above the Lakota. The Standard Oil Co. of Colorado's No. 2 State, C NW, Section 16-4n-69, Berthoud Dome, is moving in for a well to the gas at around 2,800 feet. Same company is preparing to complete its No. 1 Hertha, NW cor., Section 21-4-69, which was temporarily completed as a gas well at 2,830 feet last spring. It will be carried down to its original objective, the Muddy sand. The Erbe Oil Co. has taken over the operation of Donahoe, Babcock and others, in their No. 1 Maxwell, SE NE NE, Section 25-8n-70, Bellvue district, and will install rotary equipment. The hole has been standing at 125 feet. A. W. Thimmig has been made trustee for the new interests. C. Leonard Smith's No. 1 State, SE cor., Section 36-12n-70, Sand Creek, is drilling below 90 feet in its fourth hole. Stanley M. Barrows' No. 1 Munroe, C NW NE, Section 26-11n-69, Round Butte, is drilling at 300 feet in the Pierre shale and running tour.

Boulder County

Reliance Oil Co.'s No. 1 Anderson, NE cor. SW, Section 18-3n-70, Lyons district, was dry and abandoned at 2,320 feet. The surface is the Lyons sandstone and the well started as a test of sands in the Pennsylvanian formation. It was bottomed in granite wash when drilling was suspended. No oil or gas was encountered and the only water was a small quantity at 1,250 feet.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is drilling at 3,745 feet in hard rock. The bailer brings up enough gas to burn 3 to 4 feet into the air.

Fremont County

Continental Oil Co.'s No. 1 Shaw, SE NW, Section 2-19-70, Canon City district, was completed at 2,000 feet as a 30-bbl. well. It was deepened from 1,110 feet where it was a producer for several years.

Archuleta County

Standard Oil Co. of Colorado's No. 1 Crowley, NE cor., Section 2-32n-2e, Price Dome, encountered a good show of wet gas at 238 feet in a sand probably in the Mesa Verde formation. The flow was estimated at 500,000 to 1,000,000 feet a day. It had gone through 97 feet of shale when it entered the sand. Just to the east the San Juan River bed cuts through the Mesa Verde and oil seeps are present at a number of places at these outcrops. The gas sand is believed to lie below the bed of the river. This well cut a thin sand at 20 feet that showed saturation. The location is 8 miles southeast of the same company's No. 1 Fitzhugh, NW SE SW, Section 34-33n-1e, Chromo Dome, which is waiting for casing at 502 feet. The Chromo well had a show of oil estimated at 5 to 10 bbls. a day, if pumped.

La Plata County

E. B. Klem Petroleum Co.'s No. 1 Olbert, NW SW, Section 9-35-12, is delayed with a fishing job at 2,633 feet, the bit being in the hole.

Mesa County

Argo Oil Co.'s No. 1 Hoel, NE cor., Section 23-8s-104, High Line, is shut down indefinitely on orders of the government. When the permit was extended, the official order required that no drilling take place within a specified time. In as much as the well was under way, and had been drilling for several years, this evidently was a mistake and may be rectified.

Routt County

Texas Production Co.'s No. 4 Carstarphen, NW NW, Section 5-6n-86, Tow Creek, is drilling at 2,160 feet. Fish Creek Oil & Gas Co.'s No. 1 Omholt, NE SE, Section 29-4n-87, Fish Creek, is preparing to spud. It will test the Mancos shale and Dakota and Morrison series down to the Sundance at around 2,000 feet.

Baca County

A. R. Jones Oil & Operating Co.'s No. 1 Boice Cattle, NW NE, Section 22-34-42, is shut down at 3,815 feet.

Moffat County

Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock, is redrilling at 2,975 feet in sandy shale. Old bottom was at 3,042 feet. Texas Production Co.'s No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, swabbed 82 bbls. in 12 hours from the Sundance at a total depth of 4,578 feet. It is a little lower on the structure than No. 11 Knowlton, a little to the northeast. Same company's No. 4 Wick, NW NW, Section 10-4n-91, is drilling at 4,165 feet. No report has been received from S. H. Keoughan's No. 1 State, SW SW, Section 16-4n-101, Skull Creek, which at last report was preparing to run 2,700 feet of 6¼-inch. Mountain Fuel Supply Co.'s No. 2 State, SW SE NE, Tract 37-12n-100, cemented the conductor pipe at 81 feet.

Pueblo County

Kuykendall Oil Corp.'s No. 1 Beecher, SW cor., Section 7-22-66, Rock Creek, is waiting for cement to set after casing off water at 610 feet. The hole is bottomed in the Morrison formation.

Park County

South Park Oil Co.'s No. 1 Milligan, NE SE, Section 13-8s-76, Jefferson district, is shut down for casing at 1,580 feet, and South Park Oil & Gas Co.'s No. 1 Esch, SE NW, Section 5-9s-76, is drilling at 525 feet.

WYOMING

The Ohio Oil Co., which has had an unusual run of good luck this year in its wildcatting campaign, appears to be on the eve of making another important discovery in the Lance Creek Field, in Niobrara County, eastern Wyoming, in its No. 4 Converse Sheep, SE SW SE, Section 32-36-65. This operation is shut down at 3,731 feet in the Sundance formation while repairs are being made to the derrick floor resulting from a fire. The hole is showing oil and gas and a little water, but the capacity cannot be determined at this time as the hole is being drilled with a rotary and was full of mud at the time of the fire. The oil tested 36.2 degrees. The 8⅝-inch casing was cemented on top of the Sundance at 3,612 feet. The Ohio company drilled the original discovery well in Lance Creek in 1917 and since then it has produced oil and gas from the Muddy, Dakota and Lakota sands of the lower Cretaceous, but they are very irregular in thickness and the production erratic. The field has produced a little more than 3,800,000 bbls. of oil, but the output now is down to 100 bbls. The Ohio company started to deepen one of its old wells the past spring to test the Sundance and possibly the Embar-Tensleep, which have never been drilled on the structure. It lost three wells before it reached the objective and was drilling in its fourth hole when the discovery was made. The structure is a large one with 700 feet of closure and has dips varying from 3 to 35 degrees. Lance Creek was the principal background for a big stock speculation movement in 1917 and the new discovery is renewing activity in the old issues. The Argo Oil Co., which owns offset acreage to the discovery well, is drilling at 3,210 feet in its No. 2 Ford, SW SE, Section 33-36-65, which is being deepened from the Muddy to the Dakota.

Weston County

One completion and four new locations were reported in the Osage Field in Weston County. The Lambie Oil Co.'s No. 5 Bock, NE SW NE, Section 14-46-64, found the sand at 1,661-75 feet and after a shot will pump 15 bbls. per day. Pipe line runs from the field and deliveries to refineries the past week averaged 1,550 bbls. daily. The new locations follow: Yellowstone Petroleum Co.'s No. 2 Logan McCullough, CEL NW NE, Section 23-46-64, is rigging up, and Lambie Oil Co.'s No. 6 Bock, C SW NE, Section 14-46-64, is rigging up. Osage Trust Co.'s No. 9, SE cor., Section 14-46-64, and its No. 10, CEL NW SE, of the same section, are both rigging up. Dornacher, Bock & Monahan's No. 1, SE cor. SW, Section 11-46-64, is ready to spud, and Lambie Oil Co.'s No. 3 Bock, SW cor. NE, Section 14-46-64, is drilling at 1,600 feet. Decker Oil Co.'s No. 1, NW NE NE, Section 1-45-64, is running the 8¼-inch at 1,725 feet, and Henderson, Garbereck and others' No. 1 Bock, SW cor., Section 2-46-64, is shut down at 1,475 feet.

Converse County

Ohio Oil Co.'s No. 5 Jones, Section 9-33-76, Big Muddy Field, is drilling at 3,190 feet, and Continental Oil Co.'s No. 50 Whiteside, SW SW, Section 9-33-76, is being recemented at 3,304 feet. Converse Oil & Gas Co.'s No. 1 Carlson, SW SW, Section 27-33-73, Alkali Creek, recemented the 12½-inch at 1,087 feet.

Natrona County

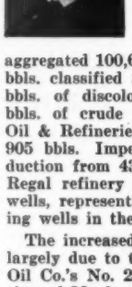
The Midwest Refining Co. has made a location and is moving in for the deep test to be drilled on the Geary Dome in its No. 11, SE NW NW, Section 32-34-77. It will be drilled with rotary tools and the contract has been given to the Olson Drilling Co. which firm put down the discovery well on the Midway Dome. A new type of steel derick is being erected. The location is near a test drilled

(Continued on Page 105)

TURNER VALLEY PRODUCTION MAKES NEW RECORD DURING SEPTEMBER

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Oct. 18.—Production from the Turner Valley Field for September established a new record, with deliveries of light crude oil and crude naphtha aggregating 112,563 bbls. The production for June, 1930, amounting to 111,960 bbls., represented the previous record.



Deliveries to Imperial Oil, Ltd., in September aggregated 100,658 bbls., including 54,733 bbls. classified as crude naphtha, 43,251 bbls. of discolored naphtha, and 2,674 bbls. of crude oil. Deliveries to Regal Oil & Refineries, Ltd., amounted to 11,905 bbls. Imperial Oil, Ltd., took production from 43 different wells, and the Regal refinery took production from 10 wells, representing a total of 53 producing wells in the field.

The increased total for the month was largely due to the coming in of Mayland Oil Co.'s No. 2 and the doubled production of Mayland's No. 1. Mayland's No. 2, in production for only part of the month, delivered 3,576 bbls., while Mayland's No. 1 increased from 2,426 to 5,103 bbls. On the other hand, the Home wells showed a net decline. The outstanding producing well in September was Royalite Oil Co.'s No. 17, in Central Turner Valley, which delivered 6,610 bbls., or approximately 220 bbls. a day. Royalite's No. 4, the famous gusher which pioneered the deep lime production and for a number of years remained the outstanding producer, dropped in September to a new minimum of 5 bbls. for the month. In August it produced 1,122 bbls.

While crude naphtha production shows some increase, the yield of light crude from the upper horizons is far smaller than it was formerly. Only six wells are now delivering light crude oil to Imperial Oil, Ltd. Of these, Dalhousie Oil Co.'s No. 5, with 1,564 bbls. for September, accounted for more than half the month's light crude production.

Among the deep lime producers, temporary freezing still continues a problem. The Home wells have been considerably affected in the past few months. For several weeks in September three of these wells were partly off production, later returning to normal production. Calmont Oils' No. 2 in the same area, with a potential production of around 1,000 bbls., has been kept from freezing by application of heavy back pressure, which has apparently assured steady production, but on a basis of about one-eighth the potential yield. It is possible that this method may be adopted with other wells affected by freezing. The alternative is to keep a drilling outfit in constant readiness for use in cleaning out the wells immediately they show signs of freezing.

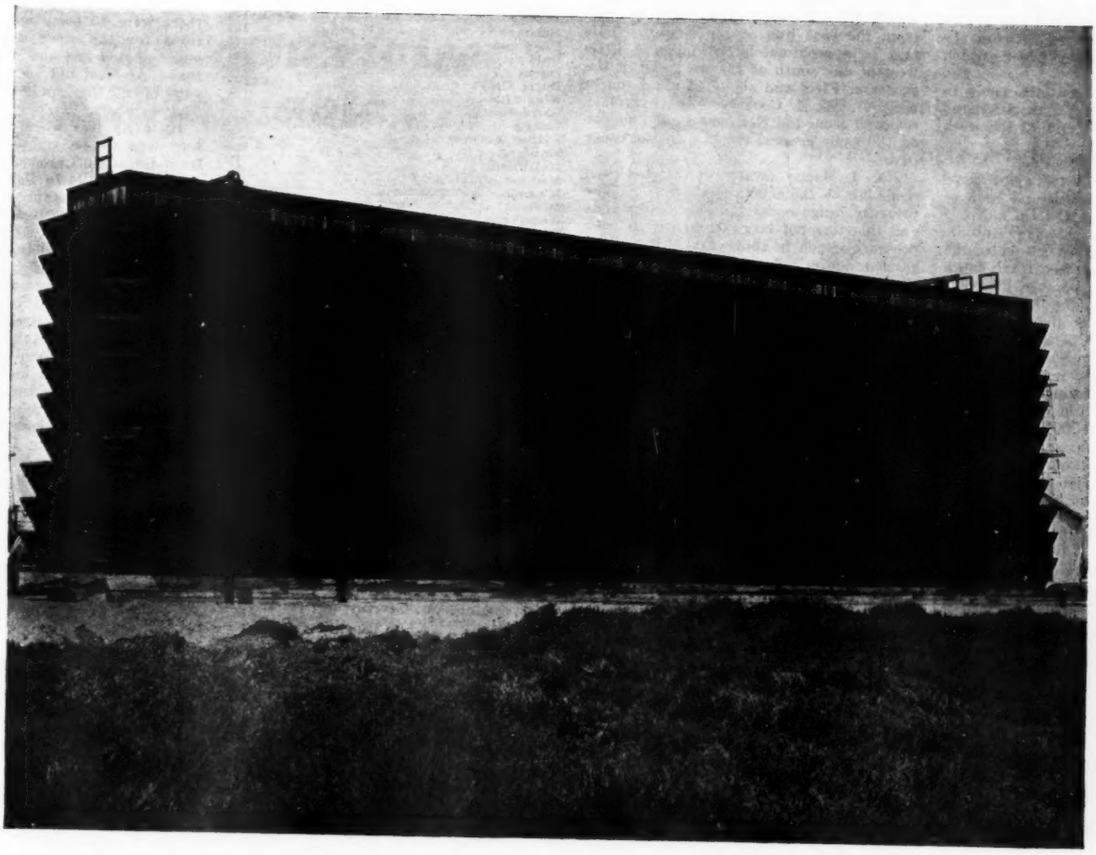
East Crest Producer

In South Turner Valley, East Crest Oil Co.'s No. 2-A, LSD 4, Section 16-19-2w5, looks like the outstanding producer in the field. Production tests with two separators are still in progress, but the latest information is that the well is delivering around 650 bbls. a day with prospects of increasing to 700 bbls. if complete crude naphtha recovery can be secured. The well appears to produce by heads, with occasional bursts of production considerably in excess of the normal yield. Adjustments are still being made to the two separators and it is possible that a third separator may be installed. A back pressure of around 1,200 pounds has been maintained, and so far no trouble has been reported from freezing. The well started with recovery of around 370

(Continued on Page 120)

Braun

Cooling Towers



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Two Wildcats Make Good Oil Producers

Taylor Marl Wells in Bexar and Frio Counties, Southwest Texas, Attract Attention and Stimulate Activity

By B. D. Stevenson
Staff Correspondent Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 20.—Only four oil wells were completed the past week in Southwest Texas and no gas wells compared with 20 oil wells and 4 gassers the week before and 18 oil wells and 2 gassers the week before that. Also the initial production of the oil wells completed dropped from above 12,000 bbls. for the two weeks before to 300 bbls. for the past seven days.

It may be proration is having its effect and it may be just one of those lulls that come at times to be followed by a bigger week later on and with no particular effect on the general average. All four completions were in the Escobas-Muckleroy Pool in Zapata County and were devoid of interest except for the amount of production they added, which was not large.

There were 29 new locations made in Southwest Texas for the week compared with 27 the week before and 22 the week before that.

Penn Opens New Pool

Two important shallow Taylor marl wells were tested this week and each of them made good. Penn Oil Co.'s No. 1 Cooksey, 12 miles east of San Antonio in Bexar County, pumped 80 bbls. the first 12 hours at 1,460 feet total depth and the next 10 hours pumped 29 bbls., which is doing good for the Taylor marl. It is estimated settled as about a 50-bbl. well and is as good or better than anything completed in the Somerset Field, which is the only other important field producing from that formation. Somerset, since the completion of the first well, has produced about 8,000,000 bbls. of oil and is still producing, and has been a profitable field. Depth of the Cooksey well is about the average depth of production in Somerset and the gravity of the oil in the Cooksey well is 36.2 which is about on a line with the best oil produced in Somerset.

The Cooksey well was spudded in to be an Edwards lime test and is on a high-powered block and the first unitized proposition in this part of the country, the Magnolia, Sun and J. D. Collette being interested with Penn in the development of the tract.

It looks like the opening of another nice pool in the Taylor marl at least and is a little over 20 miles northeast of the nearest production in the Somerset Field and just about in the general direction of the trend in faulting in this part of the Balcones fault zone. It gives oil men a chance to speculate on more pools in between the two. The Cooksey test was intended to be an Edwards lime test and it is certain that a test will be drilled at once to the Edwards lime. If it pays off in proportion it will start something.

A. H. Wray Gets Gas Well

The other Taylor marl proposition is A. H. Wray's No. 1 Burns estate in the northeast corner of Frio County, about 1 mile from the north line and 3½ miles from the east line of the county. This test is approximately 15 miles a little west of due south of the west end of the Somerset Field and about 45 miles southwest of No. 1 Cooksey. It is farther removed from the Balcones fault and not on the same general trend with the other two.

No. 1 Burns estate was tested and made about 2,500,000 feet of gas. The pressure gauge registered only 600 pounds and this was not large enough to get the pressure which is above that. It will be gauged again. Its depth is 2,368 feet. Simms Oil Co. and others are interested in the block with A. H. Wray.

These two tests, the Penn's No. 1 Cooksey and the Wray's No. 1 Burns estate, are sure to attract considerable new attention to the new Balcones fault zone. Coincident with the bringing in of these two tests there is a lessening of activity in the Pettus area and somewhat in the lower Gulf Coast as well.

Scattered Wildcats

Of the scattered wildcats over Southwest Texas that have been drawing more than their average of attention the Independent Oil & Gas Co.'s No. 1 Baldwin has been abandoned at 6,140 feet. It is a few miles west of Corpus Christi in Nueces County and is a mile or more east and south of nearest gas or oil production in the Saxet Field south of Nueces Bay. It had one encouraging showing at around 5,216 feet but failed to make a producer.

The Quincy test 12 miles east of Beeville in Bee County, which at one time developed enough gas to blow out and looked for a time like an important new discovery has been doing considerable coring since. It reached the contract depth of 5,000 feet but is continuing to deepen.

Edwin M. Jones' No. 3 Rapp, south of Pettus in Bee County, has also been abandoned at 4,307 feet. It had some encouraging showings but failed to make a well.

Southwest Texas Production

Daily average production of the pools in the Southwest Texas area for the week ending October 18 follows:

Branyon	22
Bruner	16,179
Buchanan	152
Chapman	10,488
Dale	294
Duval	200
Darst Creek	43,607
Kingsville	124
Larremore	33
Luling	9,281
Lytton Springs	755
Manford	280
McMullen	15
Medina	22
Mirando	14,175
Mineral	40
Normanna	35
Pettus	8,319
Saxet	53
Somerset	1,486
Yoast	315
Total	105,875
Week ending October 11	106,857
Decrease	982

Darst Creek 171,378 Bbls.

Darst Creek's new potential is 171,378 bbls. daily from 210 wells according to the last gauge taken for proration purposes. There have been 36 wells completed since the field was last gauged and the new potential is so high that pipe line companies have asked for a further restriction of the production. According to the previous rating the field under the new potential would be allowed to produce about 60,000 bbls. daily and the previous allowance was 42,000 bbls. Application was made to the railroad commission for further restriction and pending this hearing the new allowable runs have not been figured out. The new schedule should have gone into effect October 2.

During the past week there were no new completions in the field but some new locations were announced.

Operators in the Pettus Field were to meet in Houston Monday of this week to discuss the proration of that field.

Laredo District

Development of the new S.R.C. oil pool in the northwestern corner of Duval County, 5 miles from the north and west lines of the county in Survey 293, was the most definite and possibly the most important piece of news in the district the past week. Escobas-Muckleroy Pool in the northeastern part of Zapata County continued to register somewhat of a lessening of operations with only 17 recorded at the close of the week where there were 40 some weeks ago. Completions for the week added nothing but more oil and gas and not a great deal of that. At least not so much as to in any way affect the condition of overproduction seriously.

By early this week the Magnolia pipe line was to be complete, an extension from its main Laredo-Luling line to the new S.R.C. Pool in Survey 293 of Duval County. The distance is about 8 miles, the extension starting from the Schoolfield-O'Byrne Pool, most of which is in Survey 250 and adjoining surveys.

S.R.C. Oil Co., which with the Vacuum Oil Co. is the joint owner of the new pool, was organized by the late T. B. Slick, independent operator; Charles P. Cartter and E. B. Rubsamen, Jr., of the Rydal Oil Corp., and Trinity Drillers. A location has been made for the second test 600 feet south and 600 feet west of the first test. Vacuum had the original lease on 65,000 acres and S.R.C. Oil Co. made a deal covering 10,000 acres of the Duval County Ranch Lands Co. tract. Al. Buchanan is also interested in the proposition.

Vacuum's contract on the 65,000-acre deal calls for three tests. The first has been a producer and opens a new pool. Vacuum is now starting another test on Survey 280, 4 miles southwest of the

(Continued on Page 126)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Frontier Oil Co.'s No. 2 Boynton, 775 ft. SW of Brown-Fuller gas well	T. D. 2,615 ft.; standing.

BLANCO COUNTY

Anderson & Manning's No. 1 Speer, 600 ft. to S line, 800 ft. to W line, John W. Speer Sur.	Moving in rig.
Ben H. Ashe Pet. Corp.'s No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blanco City	Location.
Hardy-Sitton's No. 1 McMillan	T. D. 504 ft.; drlg.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 588 ft.; drlg.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 660 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 23	T. D. 900 ft.; showing oil.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 450 ft.; drlg.

BASTROP COUNTY

Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	Will change location.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 76 ft. (corrected); shut down.
Champion et al's No. 1 Smith, 2,541 ft. to NW line, 663 ft. to SW line of tract, T. Standifer Sur.	T. D. 1,990 ft.; reaming.
Texas Pet. Products Co.'s No. 1 Trigg, Stewart Sur.	T. D. 1,000 ft.; drlg.
R. S. Boiling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur.	Spudded.

BROOKS COUNTY

Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser, 900 ft. from E line, 1,000 ft. from S line of Blk. 39, E. P. de Maguellas Sur.	T. D. 3,945 ft.; reaming.

BEE COUNTY

O'Neal & Catlett's No. 1 Pat Pugh	Location.

(Continued on Page 112)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Eckert & Son's No. 1 Brehm, 150 ft. from N line, 1,800 ft. from E line, 118-ac. tract, P. L. Buquor Sur.	Location.
Eckert & Son's No. 3 L. Sandemer, 625 ft. from S line, 1,155 ft. from W line, Sur. 52	T. D. 318 ft.; drlg.
Gatlin Oil Co.'s No. 1 fee, 150 ft. from NE line, 2,000 ft. from SE line, 279-ac. tract, Juan Montes Sur.	Location.
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
Pen-Tex Oil Co.'s No. 5 Sandemer, 300 ft. S of No. 4 Sandemer	Location.
Pen-Tex Oil Co.'s No. 6 Sandemer, 300 ft. S of No. 5 Sandemer	Location.
W. R. Swearingen's No. 2 Halberdier, 300 ft. SE of No. 1, J. Perege Sur.	T. D. 460 ft.; drlg.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

DARST CREEK FIELD—GUADALUPE COUNTY

Gulf Production Co.'s No. 9 W. R. Posey	T. D. 44 ft.; drlg.
Humble Oil & Refining Co.'s No. 2-A Dowdy, NE cor. of "A" lease	Location.
Humble Oil & Refining Co.'s No. 9 D. D. Baker, 450 ft. from E line, 150 ft. from N line of lease, Darst Sur.	Location.
Humble Oil & Refining Co.'s No. 7 Wilson, 150 ft. from N and E lines of lease	Location.
Humble Oil & Refining Co.'s No. 17-A L. G. Denman	T. D. 60 ft.; standing.
Humble Oil & Refining Co.'s No. 18-A L. G. Denman	Spudded.
Magnolia Petroleum Co.'s No. 10 Thomas Dix, east offset to No. 3 Thomas Dix, J. W. Robinson Sur.	T. D. 2,600 ft.; completing.
Magnolia Petroleum Co.'s No. 5 Rand Miller, 390 ft. from NW line, 780 ft. from SW line of lease, Alexander Sur.	Location.
Magnolia Petroleum Co.'s No. 12 Thomas Dix, 450 ft. from NE and NW lines of tract, J. W. Robinson Sur.	T. D. 2,603 ft.; bailing.

(Continued on Page 114)

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Peak at Playa Del Rey by November

Increase May Continue for Another 10 Days. Upper Zone Favored by Operators. State Curtailment Now on Firmer Foundation

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 18.—Although crude oil production in California is considerably higher than the allowable maximum of 550,000 bbls. per day, which the Operators General Committee has fixed for the current period ending December 31, the curtailment program is on a firmer basis than heretofore. Producers and refiners are aware of the necessity of curtailing both producing and refining operations so essential to stabilization and are consequently in accord with this progressive movement. The meeting of Kettleman Hills operators in San Francisco this week for the purpose of formulating and perfecting plans for unit development at Kettleman Hills is perhaps the most important conservation movement undertaken in California up to the present time in view of the enormous potentiality of this major oil and gas field. The meeting this week culminates a long period of discussion and a concerted attempt to unify development at Kettleman Hills in order to prevent demoralization for the next several years.

This meeting is of paramount importance because it may set a precedent and result in the initiation of similar constructive measures in other fields. The potentiality of the Middle and South Domes of the Kettleman Hills anticline has not yet been definitely determined. The South Dome does not look particularly promising at the present time but subsequent development work may change the aspect of the situation, notwithstanding that one duster has already been drilled. The Middle Dome, on the other hand, looks quite promising for deep Temblor production similar to that secured in the North Dome. If the Middle Dome is later found highly productive it, too, must be brought under some form of regulation in order to prevent the voiding of all constructive curtailment work undertaken up to the present.

It is a little too early to determine the future status of the North Belridge Field of Kern County where the Belridge Oil Co. recently proved up the existence of prolific Temblor production similar to that developed in the North Dome at Kettleman Hills. It is needless to say that this field must also be brought into line if permanent stabilization is to become a reality. Unified development is especially necessary in high pressure fields similar to Kettleman Hills and North Belridge which produce extremely high gravity oil devoid of the heavier fractions because it does not require very much oil of this character to have an adverse effect on the refined oil market. The substantial amount of natural gas produced in conjunction with the crude oil also makes it practically obligatory to effect unit development because this natural gas, while lean, yields a considerable quantity of natural gasoline.

Playa Del Rey

Daily production of the Playa Del Rey Field registered an increase during the past week and a further gain is not at all improbable within 10 days. Based on the amount of development work under way and the number of wells scheduled for completion, peak production at Playa Del Rey should be reached before the end of November. Production curves of wells finished up to the present indicate an unusually rapid decline and this has been a very important factor in field production as it has resulted in unexpected fluctuations. During the past several weeks daily production at Playa Del Rey has remained relatively constant, notwithstanding the completion of more than 25 wells. This indicates the unusually rapid decline subsequent to completion as the settling in production has practically offset the amount of additional production added by new wells.

This abnormal decline in production is quite pronounced in the deep Recreation zone and would have resulted in serious losses to many operators if original plans to develop the deep zone had been carried out. In view of this condition many operators have decided to set the upper, or Del Rey zone as their objective. This horizon does not show the high initial characteristics of the lower zone but the larger amount of oil sand present results in a higher sustained flow. As the situation looks at present the upper, or Del Rey zone, discovered by the Union Oil Co., should yield more oil per acre than the deeper sand. Substantially lower drilling costs has also been a contributing factor in the decision of operators to develop the upper zone in preference to the lower.

A check made several days ago revealed the fact that the deep Recreation zone was producing 13,250 bbls. per day, compared with 12,000 bbls. from the upper zone. On the basis of average daily well production, the shallow sand is far superior to the lower as the 20 wells producing in the former average approximately 600 bbls. per day each, compared with an average of 510 bbls. per day for the 26 wells on production in the deep zone. Of 12 wells finished in the Playa Del Rey Field this week, 8 were completed in the upper, or Del Rey horizon. The largest well finished this week was the Pacific Western Oil Co.'s No. 1 Stanley, which was recompleted doing 1,520 bbls. of clean 25.4 gravity oil and 475,000 feet of unusually wet gas per day from 6,100 feet. This well was originally finished in the deep Recreation zone several weeks ago but was killed shortly afterwards to add a little more hole.

The Knox Powell Stockton Co. successfully completed No. 1 Davis early in the week and this new well was brought in under a natural flow doing 1,230 bbls. per day from 6,144 feet, the hole having been finished with a 4¾-inch liner carrying 200 feet of perforated. The Mohawk Petroleum Co., which has been pursuing an aggressive development campaign in the Playa Del Rey Field, added a new well to its list of producers by finishing No. 2 on Lease 0 doing 675 bbls. per day from the upper or Recreation zone at 4,210 feet. The Speedway Petroleum's No. 1 Venice, another upper zone completion chalked up this week, was brought in flowing 580 bbls. of 24.6 gravity oil and 5,400,000 feet of natural gas per day from 4,500 feet, the hole having been finished with a 6⅝-inch perforated liner. This new well showed an unusually large amount of natural gas and, in view of previous experience, can be expected to show a substantial increase in oil production after the production of gas has diminished.

Other Completions

The George F. Getty Oil Co., with three producing wells to its credit in this field, successfully completed No. 4 Venice doing 495 bbls. of 22.6 gravity oil per day on a compressor from the Recreation zone at 4,200 feet, the hole having been finished with a 6⅝-inch liner carrying 615 feet of perforated. The Coloma Oil Co.'s No. 1 Venice and Gantz Oil Syndicate's No. 1 Venice were both finished in the Recreation zone late in the week. The former, bottomed at 4,545 feet and finished with a five-eighths-inch liner carrying 925 feet of perforated, was good for 360 bbls. per day, while the latter, carried down to 4,508 feet, came in under a natural flow doing 340 bbls. of 23.6 gravity oil initially. The Mason Oil Syndicate successfully completed its first producer in the Playa Del Rey Field when No. 1 Venice was brought in flowing 280 bbls. per day from the Recreation zone at 4,520 feet, the hole having been finished with a 5-inch liner carrying 1,035 feet of perforated. B. C. Morrison's No. 4 Del Rey, bottomed at 4,250 feet, was good for 910 bbls. initially, the oil testing 23.6° and showing a cut of 2 per cent. The Altadena Oil Co. recompleted its No. 1 Venice a few days ago flowing 1,915 bbls. of 23.3 gravity oil initially from 6,101 feet. This well originally came in several weeks ago flowing 1,500 bbls. per day from 6,089 feet but water broke in and necessitated a recement job. This corrective work, together with the additional hole made, resulted in substantially larger production. Burket & Braun finished their second completion in the Playa Del Rey Field when No. 2 Venice was given a chance to make a bid for production in the deep Recreation zone. This new well, which encountered the top of the Schist at 6,096 feet and was bottomed at 6,097 feet, registered an initial daily production of 780 bbls., the oil testing 23.7°. The Osage Oil Co.'s No. 1 Venice, bottomed at 4,203 feet and finished with a 6⅝-inch liner, including 775 feet of perforated, was brought in under a natural flow doing 390 bbls. initially from the Del Rey zone.

Long Beach

The Long Beach Field of Los Angeles Basin, which has sustained continuous drilling for the past nine years, yielded another group of satisfactory completions during the past week. The Shell Oil Co. headed the completion list by bringing in No. 10 Patton Wilson flowing 1,551 bbls. of unusually clean 29.4 gravity oil from 6,962 feet, the hole having been finished with a 6⅝-inch oil string carrying 852 feet of perforated. This is the second well finished by the Shell at Long Beach in the past 10 days as the company had just previously completed No. 7 Stakemiller flowing 1,160 bbls. initially from 6,030 feet. The Higgins Brothers also chalked up a satisfactory completion in the Long Beach Field this week as their No. 1 Signal was returned to production flowing 1,260 bbls. of 27.4 gravity oil after being redrilled and deepened to 7,610 feet. The Chiksan Oil Co. also added a new well to its list of producers this week by recompleting No. 1 Fee flowing 750 bbls. initially from the deep zone after redrilling and deepening it to 7,550 feet. This well, which is flowing through a 54/64-inch bean under a pressure of 520 pounds, was finished with a 3-inch liner carrying 520 feet of perforated.

The Vesta Petroleum Co.'s No. 4 Signal, carried down to 7,624 feet and finished with a 4¾-inch liner including 1,230 feet of perforated, was brought in flowing 515 bbls. of 29.2 gravity oil daily. The Dabney-Johnston Oil Corp., which has engaged in a consistent development campaign extending over the past year, completed No. 54 Signal, a new well, flowing 120 bbls. of 29.9 gravity oil per day from 7,026 feet. This well, which was bottomed at 7,094 feet and subsequently plugged back to 7,026 feet, was put on a compression upon completion but subsequently taken off and allowed to flow naturally. The Zenith Oil Co.'s No. 3 Signal looked like an excellent well upon completion at 7,638 feet but water broke in immediately after the well was turned loose and another cement job will be necessary.

The Vaqueros Major Oil Co., fortified with a federal court order permitting it to resume operations, has resumed work on Tideland permit No. 194, located in the west end of the Huntington Beach Field of Los Angeles Basin and preparations are already under way to validate this lease, the only tideland permit granted at Huntington Beach. The Vaqueros Major's permit embraces approximately 100 acres adjoining the Bolsa Chica Gun Club, which is under lease to the Standard Oil Co. In the Inglewood Field of Los Angeles Basin, the Standard Oil Co. has completed No. 25 on Vickers Lease No. 1 at 2,503 feet and this new well is pumping 215 bbls. of 18.6 gravity oil per day. The Bellview Oil Syndicate has recompleted its No. 1-A Grohs in the Santa Fe Springs Field and this well, bottomed at 4,713 feet, was returned to production doing 1,050 bbls. per day on a compressor.

Ventura Avenue

The Associated Oil Co. finished a nice well in the Ventura Avenue Field during the past week when No. 9-A on the

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	997,250
Fuel oil	.....	.....	.....	.....	71,950	457,175
Diesel and gas oil	77,835	11,119	.....	.....	2,670,353	1,883,113
Gasoline	484,500	69,214	407,208	58,173	15,603,401	16,193,724
Kerosene	.....	.....	.....	.....	.....	49,750
Naphtha distillate	.....	.....	.....	.....	.....	31,750
Coastwise—						
Crude oil	387,500	55,357	162,000	23,143	12,418,733	21,867,754
Fuel oil	370,252	52,893	420,470	60,067	13,984,970	15,178,523
Diesel and gas oil	7,332	1,047	61,640	8,806	1,295,614	937,578
Gasoline	221,376	31,625	168,947	24,135	10,035,771	8,736,360
Kerosene	.....	.....	.....	.....	149,256	69,509
Exports—						
Crude oil	8,999	1,286	275,391	39,342	5,385,082	4,588,338
Fuel oil	149,249	21,321	295,424	42,203	14,194,922	14,387,399
Diesel and gas oil	34,712	7,959	147,404	21,058	3,580,921	2,080,012
Gasoline	362,934	51,991	453,464	64,781	12,895,597	9,583,193
Kerosene	49,360	7,051	62,809	8,973	3,034,034	2,571,284
Lubricants	.....	.....	12,754	1,822	27,434	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	279,088	.....
Gasoline	.....	.....	.....	.....	1,008,757	1,817,947
Lubricants	.....	.....	.....	.....	24,774	138,706
Coastwise—						
Fuel oil	8,101	1,157	112,102	16,015	2,664,967	2,353,488
Diesel and gas oil	.....	.....	69,510	9,930	275,766	359,058
Gasoline	60,120	8,574	149,395	21,342	3,401,114	4,051,816
Kerosene	.....	.....	1,499	214	179,426	139,447
Exports—						
Crude oil	.....	.....	56,918	8,131	59,993	121,603
Fuel oil	.....	.....	72,950	10,421	809,316	722,826
Diesel and gas oil	.....	.....	.....	.....	457,589	326,657
Gasoline	84,680	12,097	161,305	23,044	3,316,299	4,196,576
Kerosene	1,810	259	6,180	883	548,658	528,060
Lubricants	.....	.....	.....	.....	33,579	25,713

Ventura Land & Water lease was brought in flowing 2,287 bbls. of 24.6 gravity oil and 4,980,000 feet of natural gas per day from 7,422 feet. This new producer is one of the best wells finished in the Ventura Avenue Field for several months. Additional completions are expected to be chalked up in the near future by both the Associated and Shell. The General Petroleum is putting the finishing touches on a 600-foot extension to its 1,800-foot Ferguson pier in the Rincon Field of Ventura County and rig construction is expected to get under way shortly for No. 2 Needham which will be located at the end of the new extension. The drilling of this new well, located on State tideland permit No. 55, is expected to result in the drilling of two other wells, one of which will be located on Tideland permit No. 52 held by the Richfield Oil Co.

The Barnsdall and Rio Grande, Bankline Oil Co., Elwood Exploration Co. and the Pacific Western Oil Co. started cutting back production during the past week in anticipation of new production expected to result from the completion of new wells in the near future. In conformity with the curtailment program in effect at Elwood, operators in this field are obliged to reduce current production in order that field production will not exceed the allowable maximum when new wells are completed from time to time. Previous to the adoption of the present agreement at Elwood, operators experienced considerable difficulty in keeping production down to the allowable established by the operators general committee on curtailment. Under the new plan, however, production is prevented from exceeding the maximum by building up a shortage previous to the completion of new wells. This plan has worked out very successfully at Elwood as operators in this field are in sympathy with cur-

(Continued on Page 126)

TWO NEW MT. PLEASANT PRODUCERS AND NEWLY DEVELOPING GAS AREA

By Paul A. Elliott

MUSKEGON, Mich., Oct. 20.—The Mount Pleasant area with two new oil producers and two gassers provided the only completions of the week in Michigan. Both oil wells are in Section 2-14n-3w, Chippewa Township, Isabella County and the gassers are in Broomfield and Vernon Townships, Isabella County, newly developing areas west and north of the city of Mount Pleasant.

The Dixie Oil Co.'s No. 8 N. Davis, NW SE SW, Section 2-14n-3w, topped the Dundee at 3,521 feet and the pay at 3,549 feet to be completed at 3,585 feet as a 100-bbl. initial producer.

The G-Lee-P Oil Development Co. and Fred Sias brought in their No. 6 E. Grubb, NW NW SW, Section 2-14n-3w. as a 250-bbl. well in the Dundee. Limestone was topped at 3,524 feet and pay sands at 3,547 feet. The well was completed at 3,593 feet.

New Gassers

The largest of the two new gassers was the Isabella Oil Development Co.'s No. 1 Bartlett-McClintic, SW SW, Section 3-14n-6w, Broomfield Township, Isabella County, which made 7,500,000 feet in the Marshall formation. The shallow gas formation was topped at 1,299 feet and pay sands were struck from 1,307-21 feet.

The other gasser was the No. 1 Battle of the Mellon-Pollock Oil Co., the Ohio Fuel Supply Co. and the Wittmer Oil & Gas properties, E half SW, Section 26-16n-4w, Vernon Township, Isabella County. It made more than 1,000,000 feet initial in the Marshall formation. The well was drilled only 1 foot in from 1,320-21 feet.

The Stork Oil Co.'s No. 2 Sawade and others, S half SW SE, Section 2-14n-3w, Chippewa Township, also was nearing completion as an estimated 300-bbl. producer. Dundee limestone was topped at 3,521 feet and pay at 3,551-54 feet when the well started flowing at the rate of about 300 bbls.

The Pure Oil Co.'s No. 1 Burrows and others, SE NW SE, Section 3-14n-3w, Chippewa Township, topped the Dundee at 3,520 feet and the pay at 3,560 feet. It is expected to be completed at about 3,590 feet as a 200-bbl. initial producer.

The General Petroleum Corp.'s No. 1 Pat Regan, SE NW NW, Section 36-16n-4w, Vernon Township, was drilling into the Dundee but formations were very hard. This well struck a flow of about 2,000,000 feet of gas in the Marshall formation several weeks ago but was carried to the Dundee when it went to water at the lesser depth.

The two new gassers are near previous gas strikes but are significant in that they represent slight extensions of the gas areas in the Marshall formation, the only big gas producing sand in the Mount Pleasant area. If successful operations continued especially in the Bloomfield Township area it is probable the gas will be marketed.

The McClintic-Bartlett well of the Isabella Oil Development Co. increases the potential daily gas flow of the Broomfield area to about 30,000,000 cubic feet.

New Permits

New permits issued by the State Conservation Department were: Goll & Mole Co.'s No. 2 Mumy, SW SW NW Section 2-14n-3w, Chippewa Township, Isabella County. Peninsular Oil Co., of Detroit, No. 1 Smith, NE SE SE Section 1-17n-5w, Surrey Township, Clare County. Big Lake's No. 1, S half NW Section 15-13n-10w, Aetna Township, Mecosta County. Fasking's No. 1, NE NE Section 30-5s-6e, Milan Township, Monroe County, and Johnson Oil Refining Co.'s No. 1 E. L. Gilson, SE SW Section 28-1n-13w, Trowbridge Township, Allegan County.

Drillers on the Muskegon Deep Well Syndicate's No. 1 Herman Heinz, NE NE Section 8-10n-16w, Muskegon Township, the first deep test in the proved field, are making about 30 feet a day. It will take more than three months to reach the maximum contract depth of 5,200 feet as the well is now about 2,200 feet. It is hoped by the operators, however, that large gas production will be struck in the Niagara formation at about 3,700 feet, a depth which may be reached about January 1 if no serious trouble is encountered.

The Michigan Petroleum Co. has started its new well near Ravenna, No. 1 Bush, SW Section 4-9n-13w, Chester Township, Ottawa County. The same company's No. 1 C. E. Moe in Section 6, Chester Township, deepest well in the State, has been shut down after an unsuccessful attempt to run tubing to test a show of gas struck at more than 6,000 feet.

Cass County Well

The first shipment of crude oil from Cass County, Michigan, recently was made by the E. L. Wellman Co., of Grand Rapids, which has made arrangements to purchase the output of Blair & Miller's No. 2 Stutsman, NE NW Section 32-7s-13w, Porter Township. This well was brought in as a 15-bbl. initial producer in the upper Traverse formation at a total depth of 704 feet on April 4, 1930. After being pumped for a short time, during which it made as high as 25 bbls. in 24 hours, the well was shut down for several months. Pumping

(Continued on Page 126)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	6,464	fishing
Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co.	15- 7-35	5,625	cleaning out
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,505	sd. sh. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	3,730	sd. sh. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	4,790	sd. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,190	sd. sh. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	suspended
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	2,461	cemented
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	2,720	sd. sh. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	3,810	br. sh. drilling
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	3,970	cleaning out
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 5 Oxnard, Ventura Co.	14- 2-20	3,360	abandoned
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	7,518	cemented
Rio Grande, No. 1 Lankershim, Ventura Co.	13- 4-19	1,820	set pipe
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,290	cemented
California Republic, No. 1 Sespe, Ventura Co.	23- 4-21	rig	rigging up
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	1,780	sd. sh. drilling
Lockwood Valley Oil Co., well No. 1, Ventura Co.	32- 8-21	rig	suspended
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	5,065	redrilling
General Pet., No. 1 Beiridge, Kern Co.	30-28-21	1,055	sd. sh. drilling
Richfield, No. 1 Beiridge, Kern Co.	20-27-20	5,099	sd. sh. drilling
Ohio Oil Co., No. 1 Beiridge, Kern Co.	26-27-20	mtl.	building rig
Rio Grande, No. 1 Beiridge, Kern Co.	18-28-22	3,680	suspended
Shell, No. 3 Beiridge, Kern Co.	24-28-20	311	sd. drilling
Wallace, K. C., No. 1 Beiridge, Kern Co.	32-29-21	3,798	hd. sd. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,575	deepening
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	mtl.	building rig
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	mtl.	building rig
Petroleum Securities, No. 1 Edison, Kern Co.	14-29-29	3,580	redrilling
Symark Oil Co., No. 1 Bdison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,050	sd. sh. drilling
Shell, No. 1 Semitropic, Kern Co.	17-27-23	6,750	hd. sd. drilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	710	hd. sd. drilling
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,560	hd. sd. drilling
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,190	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	4,135	hd. sd. drilling
Stabler, W. W., No. 1 Commanche Pt., Kern Co.	4-11-18	2,040	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	4,114	suspended
Wrenn, J., No. 1 Antelope Plains, Kern Co.	32-25-17	812	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	118	sd. drilling
Petroleum Securities, No. 3 Huron, Fresno Co.	28-20-16	....	location
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	....	location
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Kent & McDonald, No. 1 Carizzo, San Luis Obispo Co.	3-32-22	1,315	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,941	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	rig	rigging up
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	880	sd. sh. drilling
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,000	set pipe
Standard, No. 1 King City, Monterey Co.	23-22- 7	5,680	hd. sd. drilling
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
O'Donnell, J. E., No. 2 Dudley Ridge, Kings Co.	20-23-20	rig	rigging up
Friend & Fiske, No. 1 Tulare Lake, Kings Co.	11-23-19	1,050	sd. sh. drilling
Knudsen & Smith, No. 1 Reef Ridge, Kings Co.	36-23-17	mtl.	building rig
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	4,840	sd. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	3,535	suspended
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	730	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,495	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	23-23-27	850	cemented
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-23-27	918	pumping
Western Oil Co., No. 1 Porterville, Tulare Co.	35-23-27	1,022	testing
Mills & Wilson, No. 1 Porterville, Tulare Co.	35-23-27	913	testing
Cummings Pet., No. 1 Porterville, Tulare Co.	27-23-27	1,170	suspended
Jennings Syndicate, No. 1 Porterville, Tulare Co.	8-23-28	510	fishing
Terra Bella Drlg. Co., No. 2 Porterville, Tulare Co.	34-23-27	920	testing
Terra Bella Drlg. Co., No. 3 Porterville, Tulare Co.	23-23-27	rig	rigging up
Jaques Oil Co., No. 1 Porterville, Tulare Co.	34-23-27	914	suspended
Rayatt Oil Co., No. 1 Porterville, Tulare Co.	34-23-27	1,065	sd. sh. drilling
Hallock, William, No. 1 Porterville, Tulare Co.	34-23-27	1,090	sd. sh. drilling
Kern Pet. Co., No. 1 Porterville, Tulare Co.	34-23-27	1,080	sd. sh. drilling
Miller & Sylvan, No. 1 Porterville, Tulare Co.	11-23-27	410	sd. sh. drilling
Larson Oil Co., No. 1 Porterville, Tulare Co.	11-23-27	998	sd. sh. drilling
Larson Oil Co., No. 2 Porterville, Tulare Co.	11-23-27	118	sd. sh. drilling
Hagerty & Caine, No. 1 Porterville, Tulare Co.	2-23-27	816	abandoned
Alexander, Ford, No. 1 Porterville, Tulare Co.	34-22-27	1,000	abandoned
Kettleman Trust, No. 1 Porterville, Tulare Co.	21-22-27	550	sd. sh. drilling
Lewis, Paul M., No. 1 Porterville, Tulare Co.	15-22-27	1,118	hd. sd. drilling
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	1,180	sd. sh. drilling
Roetner Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	rig	rigging up
Wells & Armstrong, No. 1 Porterville, Tulare Co.	10-22-27	310	suspended
Dennis Oil Co., No. 1 Porterville, Tulare Co.	29-23-28	50	sd. drilling
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	750	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	23-12- 3	2,050	rig cable tools

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	5,315	sd. sh. drilling
Olympic Realty Corp., No. 1 Venice, Los Angeles Co.	14- 2-15	3,694	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	set pipe
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Central Oil Co., No. 1 Compton, Los Angeles Co.	28- 3-13	5,094	suspended
Combs, E., No. 1 Compton, Los Angeles Co.	16- 3-13	692	suspended
Guajome Oil Co., No. 1 El Nido, Los Angeles Co.	33- 3-14	rig	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	cleaning out
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	1,378	sd. sh. drilling
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	300	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	6,295	suspended
Tenacity Oil Co., No. 1 Dominguez, Los Angeles Co.	11- 4-13	8,580	suspended
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	5,300	hd. sd. drilling
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,726	testing
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	rig	rigging up
Bidart Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	2,895	recemented
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	gas—shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,011	br. sh. drilling
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,278	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	cleaning out
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	fishing
Union, No. 1 Coyote Sansinena, Los Angeles Co.	30- 2-10	4,811	br. sh. drilling
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	6,777	hd. sd. drilling
Lamona Oil Co., No. 1 Pomona, Los Angeles Co.	34- 1- 9	965	hd. sd. drilling
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	6,733	testing
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	2,464	hd. sd. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	1,010	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	36-11-10	3,240	suspended
McGregor Syndicate, No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	cleaning out
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,155	gr. sd. drilling
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	4,615	hd. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,390	hd. sd. drilling
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 3- 8	1,549	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	rig	rigging up

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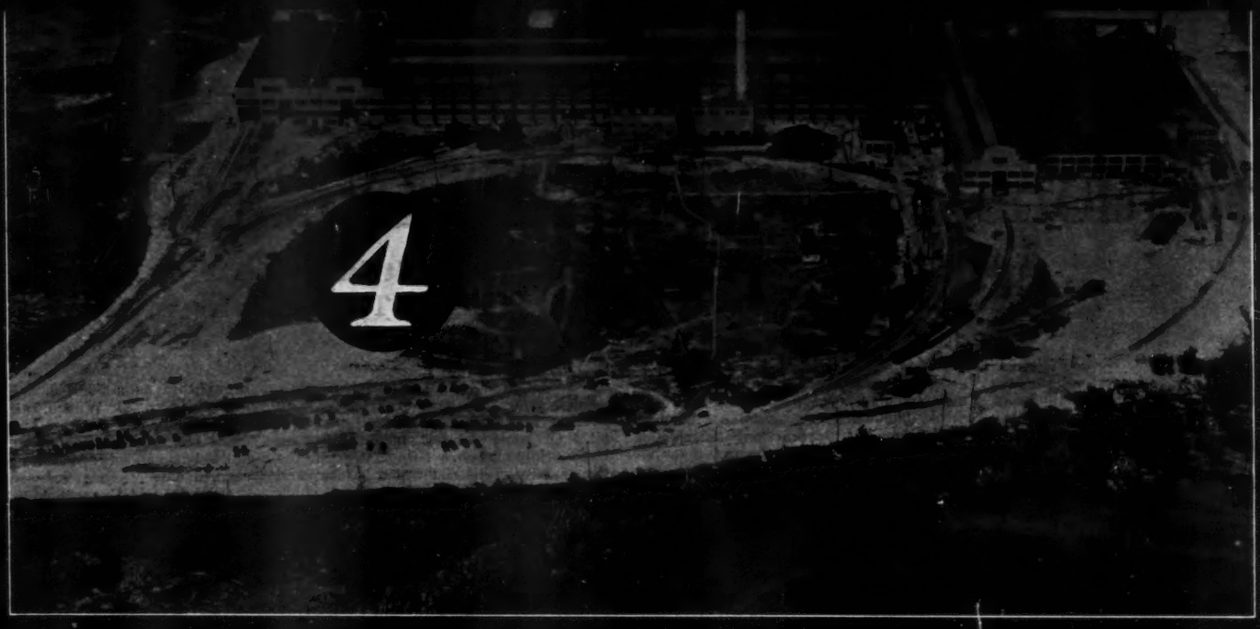

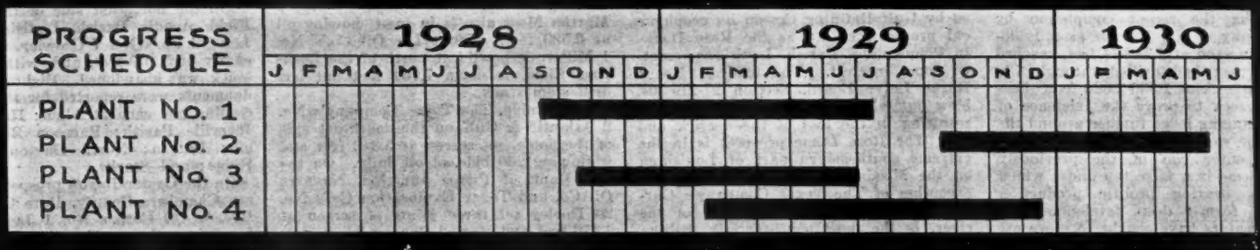

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Locations Made to Test Dome Theory

Belief That Overhanging Ledge Exists in Salt Structures at Allen, in Gulf Coast, Causes Starting of Two Wells

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 20.—Locations for what promise to be two of the most interesting tests drilled on the Gulf Coast in some time were made by Mills Bennett Production Co. at Allen, Brazoria County, late in the week. These tests, located well up on the previously outlined cap rock area of the dome, will attempt to drill through cap rock and salt in exploration of possible underlying sands.

Following the recent completion by this company of No. 1 Poole as a 1,600-bbl. well in sand at 4,348-74 feet, reached after the test had drilled through 736 feet of cap rock at 1,530-2,086 feet, these tests will seek to prove the existence of this overhanging ledge further around the dome. The well was taken as indicating that the outer rim of the previously outlined dome is a false top under which are sands bearing prolific production missed in former deep development in which operators have sought to move off the cap rock for sands flanking the dome. Although the Poole well since completion has gone largely to water, this is attributed to the casing seat which possibly has permitted water to break in from above.

Locations of Tests

The new locations at Allen are No. 2 Random on the southeast sector and No. 2 Reese on the opposite or northwest side. The former is 860 feet southwesterly along the northwest line from the northeast corner of the C. & H. Alsberry League and 100 feet southeasterly at right angles to the line. The Reese location is 870 feet southwesterly along the northwest line from the northeast corner of the T. J. Reese 277.439-acre tract and 720 feet southeasterly at right angles from the line, in the Thomas and William Alley League.

The Random location is approximately 550 feet to the northeast of the Poole well on the southeast side of the cap rock area. It should top cap rock at approximately the same depth as in the Poole well, which was at 1,530 feet. This also is approximately 500 feet west of No. 1 Random, which was abandoned the past week at a total depth of 5,363 feet. This well, the first started at Allen Dome by Mills Bennett Production Co., was located off the dome. It encountered high gas pressures which hampered attempts to complete the well and in view of the discovery of the overhanging ledge at Allen which might place the No. 1 Random, as well as other development, except the Poole well, too far out from the main part of the dome, it was quit in favor of the second location 400 feet closer in. The Random lease is owned jointly by Mills Bennett Production Co. and Shell Petroleum Corp., although the remainder of the dome except the San Bernard River bed rights, is owned entirely by Mills Bennett Production Co., which acquired it from Shell early this year.

The Reese location is in strictly wildcat territory as far as deep drilling is concerned. With the exception of one test, Shell Petroleum Corp.'s No. 3 Reese, 750 feet to the southwest, abandoned at 5,121 feet, there has been no deep development anywhere on the west and north sides of the dome. A number of tests have been drilled around on the cap rock but these have been abandoned at shallow depths in the cap rock or salt.

This new development for deep production below cap rock and salt at Allen is of particular interest in view of exploration at Barbers Hill, where important production has been obtained in sands underlying large masses of cap rock and salt. The drilling program at Allen is being launched to bear out theories of certain Barbers Hill operators that Allen, as well as possibly other domes, are similar in formation to Barbers Hill, and if so, offer extensive probable new sources of oil supply. A special article on this subject appeared in the October 16 issue of The Oil and Gas Journal.

Week's Completions

General development on the Gulf Coast the past week was rather quiet with few completions and little new production added. A blowout in a wildcat just started by Gulf Refining Co. on its geophysical prospect, known as the Rose Dome, in Plaquemines Parish, Louisiana, created some interest. The wildcat, No. 1 Buras Levee Board, Section 27-21s-30e, blew out while drilling around 200 feet, resulting in the loss of the derrick and rig. The Rose Dome prospect is in the extreme southeastern part of Louisiana on the Mississippi River, and, with the exception of The Texas Company's Garden Island Dome at the mouth of the river, is the most southeasterly drilling dome on the Gulf Coast. The prospect was discovered in 1928 with the seismograph but the No. 1 Buras is the first test started. During 1929 a location was made and derrick erected for No. 1 Morris & Rose but this was abandoned because of a legal difficulty.

Chief among the completions of the week was Vacuum Oil Co.'s No. 29 Miller at Lockport, Calcasieu Parish, Louisiana, which came in flowing 1,000 bbls. daily from sand at 3,874 feet, and which still is maintaining that flow as one of the best wells completed in that sand. Vacuum Oil Co.'s No. 23 Miller, completed last February as a producer at 4,362 feet and which stopped flowing, was worked over and brought back in flowing 250 bbls. of fluid, 10 per cent oil. Of some interest at Lockport in Union Sulphur Co.'s No. 2 Moss in the west extension district which is in a sand showing oil at 5,296-5,307 feet, and which has set 7-inch casing to test. Two wells already have been completed in this area, which is about 2,000 feet west of the main field, but those found the sand around 4,800 feet. The first well, Union Sulphur Co.'s No. 1 Moss, is being worked over again with bottom of hole at 4,814 feet and late in the week was running tubing. This company's No. 1 Martha Moss also is in sand showing oil at 6,599 feet. Yount Lee Oil Co.'s No. 1 Miller, deep wildcat north of the Lockport Field, is down 7,764 feet but has drill stem stuck.

At Humble, The Texas Company's No. 2 Atlantic & Gulf on the southeast side of the dome, set screen at 5,340 feet and is flowing 250 bbls. of oil daily. On the east flank of Pierce Junction, Navarro Oil Co. and Texas Exploration Co.'s No. 20 Dooley set three joints of screen at 4,476 feet and started flowing 1,000 bbls. of fluid, 20 per cent oil, on a three-eighths inch choke. The Dooley tract in the past has been one of the most prolific leases on the east side and on which these operators have completed a series of good wells. One other completion was recorded at Pierce Junction, this being Moody Corp.'s No. 2-B Whitehead, a former producer, which was worked over and brought back in for 900 bbls. at 4,348 feet.

In the north extension district of Vinton, Gulf Refining Co.'s No. 2 Gardner, formerly completed in the 3,400-foot sand, was deepened to the newer sand at 3,571 feet, at which level it was brought in as a 500-bbl. well. Wilson-Broach's No. 3 Wilson, also deepened from 3,496 feet to the lower sand at 3,624 feet, started flowing at 2,500 bbls. daily but sanded up and now is being cleaned out.

Other completions included Paraffine Oil Co.'s No. 14 Ellen, Batson, pumping 12 bbls. net oil, 579 feet; Rio Bravo Oil Co.'s No. 92-A Cotton, Saratoga, a gas well at 630 feet; Paggi Brothers' No. 16 McShane fee, Saratoga, pumping 10 bbls. oil, 959 feet; Associated Oil Co.'s No. 5 Paraffine, Edgerly, pumping 60 bbls. fluid, 5 per cent water, 3,110 feet.

On the northeast side of the Jennings Field, Acadia Parish, Louisiana, Yount Lee Oil Co.'s No. 7 Crowley, drilled into cavity at 5,197 feet, and, with drill stem stuck, was abandoned. Eight other abandonments were reported for the week including one each at Allen; Hager Dome, Iberville Parish; Raccoon Bend; Refugio; Batson; North Dayton; Stratton Ridge; and Starks.

On the Oyster Bayou prospect in southern Chambers County, Pure Oil Co. and Rycade Oil Corp.'s No. 1 Jackson, Robert Oliver Survey, has resumed drilling and late in the week was in gumbo and shale at 6,495 feet. This test was to have been abandoned during the previous week at 6,320 feet, but decision later was made to deepen the hole.

Gulf Coast Production

Daily average production of the pools in the Gulf Coast area for the week ending October 18 follows:

SOUTHEAST TEXAS	
Allen	307
Barbers Hill	21,849
Batson	1,132
Big Creek	3,988
Blue Ridge	1,693
Brenham	135
Boling	960
Clay Creek	3,175
Damon Mound	619
DeWalt	11,855
Fannett	659
Goose Creek	4,523
Hankamer	1,542
High Island	946
Hull	7,404
Humble	15,384
Jasper County	25
Lost Lake	457
Markham	230
Moss Bluff	46
Mykawa	200
Nash	247
North Dayton	1,186
Orange	2,140
Orchard	1,768
Pierce Junction	10,370
Port Neches	1,470
Raccoon Bend	9,226
Refugio	26,869
Esperson (Sheeks)	2,964
Saratoga	1,312
Sour Lake	2,262
South Liberty	3,209
Spindletop	16,528
West Columbia	4,148
Total Southeast Texas	160,828
Total week ending October 11	162,199
Decrease	1,371

SOUTH LOUISIANA	
Anse La Butte	32
Bayou Blue	35
Bayou Bouillon	385
Black Bayou	318
Edgerly	494
Jennings	2,009
Hackberry	3,274
Lake Barre	986
Lake Pelto	17
Lockport	2,832
Port Barre	3,179
Sorrento	65
Starks	690
Sulphur	2,200
Sweet Lake	1,149
Vinton	7,167
Welsh	121
White Castle	1,073
Total South Louisiana	26,026
Week ending October 11	27,832
Decrease	1,806
Total Gulf Coast	186,854
Week ending October 11	190,031
Decrease	3,177

GULF COAST FIELDS AND WILDCATS

Week Ended October 18
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 4 Barber, north	Derrick.
Mills Bennett Prod. Co.'s No. 2 Means (workover)	Set screen 5,197 ft.; to pump.
Humble Oil & Ref. Co.'s No. 6 fee, west	Drlg. hard sandy shale 6,609 ft.
Humphreys Corp.'s No. 1 Fitzgerald, north	Cmtd. csg. 5,367 ft.
Humphreys Corp.'s No. 1-B Barber, north	Coring sand 6,391 ft.
Humphreys Corp.'s No. 6-A Barber, northwest	Fishing 5,015 ft.
Humphreys Corp.'s No. 1 Morgan (workover)	Rig up to workover 6,404 ft.
Humphreys Corp.'s No. 8-B Kirby, northwest	Drlg. shale 2,812 ft.
Humphreys Corp.'s No. 10-A Kirby (workover)	Drlg. sand and boulders, 1,038 ft.
Humphreys Corp.'s No. 1 Winfree, west	Total depth 3,095 ft.; sidetracking 2,950 ft.
McAlbert Oil Co.'s No. 1-B Higgins, east	Coring sand 3,230 ft.
Republic Prod. Co.'s No. 3 Kirby (workover)	Drlg. shale 6,673 ft.
Rio Bravo Oil Co.'s No. 1 Fisher, southwest	Drlg. sand 6,489 ft.
Sinclair Oil & Gas Co.'s No. 1 Smith, west	Drlg. lime 5,165 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, west	Drlg. lime 3,784 ft.
Sun Oil Co.'s No. 5 Chambers (workover)	Pulling liner 4,673 ft.
Sun Oil Co.'s No. 7 Chambers, south	Drlg. rock 1,652 ft.
Sun Oil Co.'s No. 12 Wilburn fee, east	Drlg. shale and lime 2,541 ft.
Sun Oil Co.'s No. 1 Zadie Fisher, southwest	Drlg. sandy shale 5,634 ft.
The Texas Company's No. 1 Williams, southwest	Reaming 5,932 ft.; to set csg.
The Texas Company's No. 1 Winfree, west	Drlg. water sand 3,846 ft.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Drlg. hard sand 6,423 ft.
Yount Lee Oil Co.'s No. 16 Chambers, south	Drlg. sand and lime 3,143 ft.
Yount Lee Oil Co.'s No. 3 Fisher, southeast	Drlg. oil sand 6,613 ft.
Yount Lee Oil Co.'s No. 6 Phillips, east	Derrick.
Yount Lee Oil Co.'s No. 9 Woodward, southeast	Pulling liner 5,069 ft.

RACOOON BEND—AUSTIN COUNTY

Humble & Valley's No. 2 Duncan-State	Drlg. sandy shale 2,750 ft.
Humble & Valley's No. 3-B Hardy	Derrick.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 1-B Reese	Drlg. shale and lime 1,167 ft.
Humble & Valley's No. 1-B Remmert	Rig.
Humble & Valley's No. 6 Saunders	Derrick.
Humble & Valley's No. 3 Sherrod	Building derrick.
Humble & Valley's No. 9 Thompson	Abandoned 3,718 ft.
Humble & Valley's No. 11 Thompson	Derrick.
Humble & Valley's No. 4 Wilson	Sandy shale 3,447 ft.; set 23 ft. screen.
Humble & Valley's No. 6 Woodley	Derrick.
Humble & Valley's No. 7 Woodley	Derrick.
Humble & Valley's No. 8 Woodley	Derrick.
Humble & Valley's No. 9 Woodley	Derrick.
Humble & Valley's No. 10 Woodley	Derrick.
Humble Oil & Ref. Co.'s No. 1 Hugo-Hagen	Abandoned 5,044 ft.

HUMBLE—HARRIS COUNTY

Cullen West's No. 5 Lee, south	Rig.
LaRue trustee's No. 1 Crane, northwest	Derrick.
M. LaRue trustee's No. 1 Tuffly, northwest	Drlg. sand and gravel 352 ft.
Sun Oil Co.'s No. 14 Bender, west	Sandy shale showing oil 4,743 ft.; bailing.

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Southeastern Ward County Watched

Shares Attention With Western Crane County in Permian Basin. New Pay Proves Potential for Deeper Drilling

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 20.—Southeastern Ward County and western Crane County continue to hold most interest to those watching and operating in the Permian Basin, although several other areas are also being closely watched for further possibilities.

Cranfill Brothers and Gulf Production Co.'s No. 1 Tubbs in the eastern part of Section 8, Block B-27, Public School Lands Survey, western Crane County, the new deep discovery of the basin which absolutely surprised everyone two weeks ago when it encountered a hertofore uncovered pay horizon at 4,302 feet, and flowed 100 bbls. during the first five minutes' flow, is now slowly drilling ahead after standing shut in several days waiting on storage. The last report from the field showed it to be drilling at 4,345 feet, with from 150 to 200 pounds pressure. Changes in production do not register under this amount of pressure, consequently it is not known whether any increase in oil has been struck.

Due to the terrain of this area, which is made up of a succession of sand dunes, the monicker Sand Hills has been tacked on the area, which is the first producing district in the western part of the county, about 18 miles west of the Church-Fields and McElroy Pools, which were opened in 1927. Crude oil from those fields tests around 2.69 per cent sulphur content, while crude from the Tubbs well tests only one-half of 1 per cent. Many first believed the oil to be sweet, but upon test it was found to carry a small sulphur content.

Proves Much Territory

On the first 24-hour gauge the well made a total of only 1,051 bbls., not showing up as good as it did on the first head of 100 bbls. in five minutes, and it does not look to be as great a surprise as first reported, although the new pay horizon proves much more territory for potential production if the tests are only carried deep enough. Many areas which have heretofore been condemned by shallower tests have been given another chance by this deep discovery, and many old holes may be cleaned out and carried deeper, or previously drilled blocks may have other deeper tests put down on them.

No pipe line company has yet announced its intention of connecting with the well, but as there are five major pipe line companies owning lines which pass within 15 miles of the well, one within three-quarters of a mile, one within 2½ miles and another within 4¼ miles, it may readily expect a connection whenever desired, especially since the quality of the crude is of such a texture and containing but little sulphur.

Cranfill Brothers, Atlantic Oil Producing Co. and others' No. 1 Muir in the NE cor. of the NW of Section 23, same block, 2¾ miles south of the Tubbs well, is also being closely watched while drilling at 3,040 feet. Elevation of this test is 2,499 feet, while elevation of the Tubbs well is 2,516 feet. The Tubbs well had a gas showing at 2,900-07 feet, another at 2,930 feet and another at 3,188 feet with an oil showing at 2,995 feet, and the Muir test has evidently missed those oil and gas showings.

Ward County Discovery

Another discovery in the basin, just across the line from the Tubbs discovery, in Ward County, is also attracting much attention, especially from those who have nearby leases and royalties. This well is the Texas Pacific Coal & Oil Co.'s No. 1 Barker in Section 27, Block B-29, midway between the Shipley and Bennett Pools, promising the linking of the two areas with production, and proving a pool 8½ miles in length. However, the pay horizon may pinch out between the Barker well and Shipley Pool, or between it and the Bennett Pool, for production is spotted in this sector of the basin, and failures may be expected between the producing areas.

A northwest offset location to No. 1 Barker has been staked by the Texas Pacific Coal & Oil Co. in Section 5, Block 34. Rig will be moved from the No. 1 Barker and drilling will be started as soon as the first well is completed and rigging up accomplished on the new test. No. 1 Barker is now drilling ahead at 2,410 feet, encouraging a small increase in gas at 2,404 feet, producing 124 bbls. of oil during the last 24 hours, while drilling. It is not expected to be a large well, but one substantial enough to prove more acreage good for production from the pay formation found in this area.

Pecos County Showing

The Humble Oil & Refining Co.'s No. 1-B Thompson, in Section 98, Block OW, G.C.&S.F. Survey, Pecos County, attracted considerable attention when it encountered an oil showing at 2,350-57 feet, and an increase at 2,373 feet, striking gas above these at 2,060 feet. It shut down for 18 hours which time 400 feet of fluid rose in the hole, of which about 60 feet was oil. It was also gassing at the rate of from 500,000 to 1,000,000 feet per day. It is now drilling ahead at 2,485 feet in anhydrite without any change, looking less likely for production. It is a short distance from the Phillips Petroleum Co.'s production in the Courtney or Pryor Pool. This area was opened about a year ago, but has never produced enough oil to merit even a short pipe line to the railroad, the 22 gravity oil going into storage.

Howard County Well

Green Oil Co. and Getty Petroleum Corp.'s No. 1 Denman, in the E half NE, Section 14, Block 30, Township 1s, T.& P. Survey, in the eastern side of Howard County, about 2 miles from the Sinclair Oil & Gas Co.'s No. 1 Dodge estate which opened this new area to production about three months ago, swabbed 135 bbls. in 12 hours from a total depth of 2,703 feet. It is swabbing at the present writing, and proving an extension well, although not such a good well as the former discovery of the Sinclair company. The nearest production to these two wells is several miles to the east on the California Co.'s Foster lease across the line in Mitchell County.

The Gulf Production Co. is now busy swabbing a semiwildcat on the northeastern side of the old McCamey Pool, in Section 28, Block 2, M.K.&T. Survey, approximately 2¼ miles from nearest production which is on Shirk lands. The extension well is shown to be on the King ranch. It topped the pay at 2,693 feet, the hole filling with oil as it was drilled deeper. It is now standing shut down at 2,716 feet in gray lime swabbing 2½ bbls. per hour. This is one of the first wells

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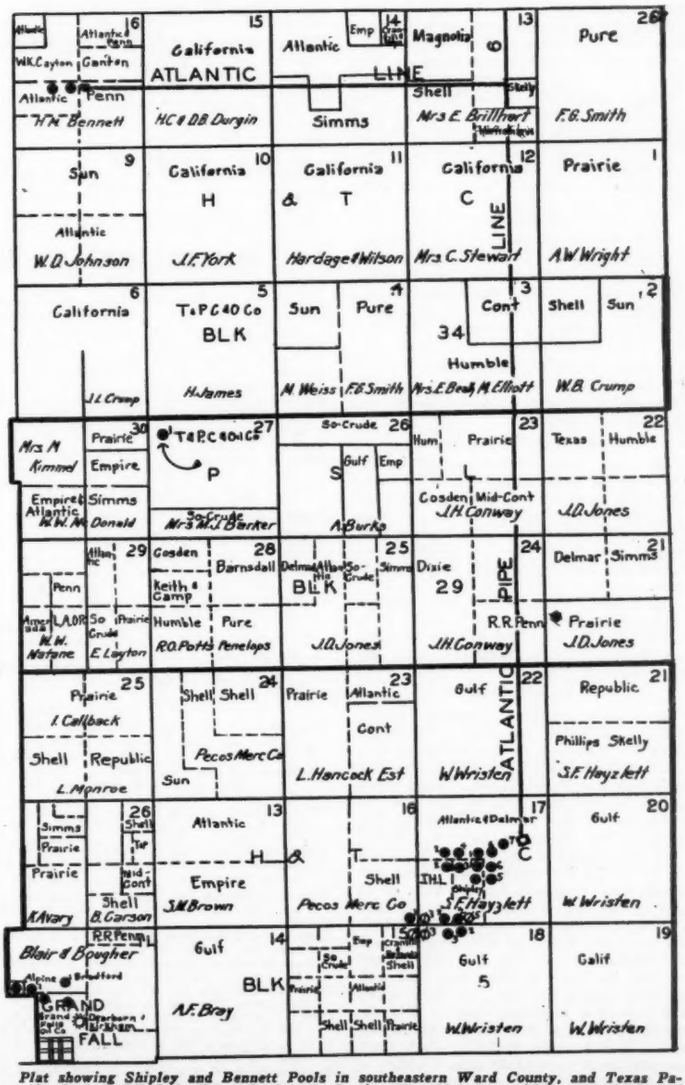
WILDCAT OPERATIONS IN WEST TEXAS

Week Ended October 20

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Bl. A-43, Public School Land	Shut down 4,559 ft.; estimated 1,000,000 ft. gas 4,205-97 ft.; increase 4,290 ft.; top pay 4,290 ft.; increase oil 4,372 ft.; will flow; well pinched until 10,000-bbl. tank completed.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Shut down 2,510 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,750 ft.
CONCHO COUNTY	
Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 mi. W of Paint Rock	Shut down 1,720 ft.
CRANE COUNTY	
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-37, Public School Land	Drlg. 4,314 ft.; flowed 147 bbls. oil under pressure.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W. Sec. 23, Blk. B-37, Public School Land	Drlg. 2,763 ft.
CROCKETT COUNTY	
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, L&G.N. Sur.	Spudded and shut down.

(Continued on Page 104)



Plat showing Shipley and Bennett Pools in southeastern Ward County, and Texas Pacific Coal & Oil Co.'s No. 1 Barker, in Section 27, which is promising the linking of these two separate pools, as it lays midway between them, and is now a producing well.

Gray County Most Interesting Spot

Several Wells Drilling and New Locations Reported. Price Cut and Proration Troubles Principal Developments

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 20.—Proration troubles, injunctions against proration, and voluntary price cuts in the Panhandle and Wichita Falls (North Texas) districts have finally reached the climax of a general cut in crude prices in those districts by all purchasing companies, and smaller refineries, the Humble Oil & Refining Co. taking the lead in posting new prices, other purchasing companies soon following. Humble Oil & Refining Co.'s new postings became effective at 7 a.m., October 16, other postings going into effect 24 hours later.

North Texas oil is out of place, geographically, and has little hopes of receiving aid, especially when other pools are being opened in parts of Texas nearer to the Gulf Coast, making transportation costs less for the newly discovered oil. The purchasing companies desire to cut down transportation costs and consequently will elect to buy strategically, or from fields located more advantageously than the North Texas fields.

Pipe lines from Oklahoma to the north and east may some day place North Texas in a better position for marketing its oil, and demanding better prices for its production, for these lines will carry thousands of barrels of crude daily from the Mid-Continent fields and will no doubt seek North Texas crude to help keep the lines pumping to capacity, thereby competing with the pipe lines running from North Texas to the Gulf Coast where the oil is shipped to the Atlantic Seaboard by tankers, and this is one hope for the North Texas and Panhandle producers who do not have their own pipe line systems.

Regardless of proration and price cuts in the Panhandle and Wichita Falls districts during the week they both failed to bring down production, but, instead, it increased. In the Panhandle district it took a 936-bbl. per day jump while in the latter district it increased 1,470 bbls. per day. However, but few wells were completed in either district, and but few locations were made, thereby showing that the price cuts had registered and made themselves felt.

New Gray County Area

The new area recently opened by the discovery of Graham-Cree and Hoover on the Sullivan ranch in Section 136, on the west side of Gray County is the most active and interesting spot in the Panhandle district with several wells drilling and a few new locations reported for the area.

In Young County, which has been the most active county in the Wichita Falls district for the past few months, all eight completions in the county during the week were dry holes.

Burkett Pool

In the Burkett Pool, Coleman County, Brown, Eckholm and others completed their No. 1 Golson for an initial production of 366 bbls. from the Cross Cut sand topped at 1,591-93 feet. Total depth of the second producer of this area is 1,593 feet. The Arcadia Refining Co. opened this extension in the Burkett Pool, September 8, in its No. 1 Golson in the I. K. Harris Survey. That discovery was completed for 164 bbls. of 43 gravity oil on a 12-hour gauge, and Brown, Eckholm and others' No. 1 Golson is a west offset to the Arcadia well. The Prairie Oil & Gas Co. has started to drill its lease in this pool and will probably run a line into the area when it brings in a producer, thereby furnishing the first pipe line connection to the pool. The Arcadia Refining Co.'s well has produced over 8,000 bbls. through a one-eighth-inch choke, the oil going to storage.

The Overall Pool, Coleman County, produced an average of 420 bbls. during the past week.

Panhandle Proration Order

Umpire's general order No. 7, establishes potential production and allowable production in the Panhandle district of Texas, comprising Gray, Carson, Hutchinson, Moore, Potter and Wheeler Counties, for the period 7 a. m., October 16, 1930, to 7 a. m., November 1, 1930, as applied to proratable properties only.

Potential and allowable production shown on schedule for the first half of October, under general order No. 6 for unproratable properties, will be continued in effect.

RECAPITULATION AND SUMMARIES

County—	Allowable production on leases over 25 bbls.	Potential production on leases over 25 bbls.	Total wells on leases over 25-bbl. av.	Total prod. on leases over 25-bbl. av.	Exempt oil on leases over 25-bbl. av.	Bbls. proratable production
Carson	6,988	10,321	152	10,321	3,675	6,646
Gray	48,776	84,369	501	84,369	13,183	71,186
Hutchinson	10,678	15,688	216	15,688	5,690	9,998
Moore	573	849	12	849	301	549
Potter	.....	.....	...	.....	.....	.....
Wheeler	462	575	14	575	350	226
Total	67,477	111,802	895	111,802	23,199	88,605

Total potential production	124,151
Total exempt production	35,509
Total proratable production	88,642
Total outlet	80,000

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

T. F. Hunter and others' No. 1 Lowe, dry and abandoned, total depth 1,286 feet.

Clay County

Mid-Continent Oil Corp.'s No. 9 Stine and others, oil sand 1,742-62 feet, initial production 60 bbls., total depth 1,766 feet.

Cooke County

A. J. Erlewine's No. 3 Dennis, oil sand 1,239-49 feet, initial production 20 bbls., total depth 1,250 feet. Petroleum Producers and United Petroleum Co.'s No. 2 Dennis, dry and abandoned, total depth 1,521 feet.

Young County

Ard Floyd and others' No. 1 Keith, dry and abandoned, total depth 756 feet. Arkansas Fuel Oil Co.'s No. 1 Bullock, dry and abandoned, total depth 959 feet. J. A. Bearman and others' No. 1 Baldwin, dry and abandoned, total depth 700 feet. Pat Fowler's No. 1 Hill, dry and abandoned, total depth 1,062 feet. Lamar and Burkhart's No. 1 Gathright, dry and abandoned, total depth 905 feet. Primrose Refining Co. and Fullerton's No. 1 Logan, dry and abandoned, total depth 716 feet. O. H. Rathman's No. 1 Kemp, dry and abandoned, total depth 1,102 feet. H. D. Wilcox and others' No. 1 Furr, dry and abandoned, total depth 1,201 feet.

COMPLETIONS IN RANGER DISTRICT

Callahan County

Drew Beam's No. 3 Jackson, oil sand 898-903, 920-25 feet, shot 20 quarts 898-903 feet, initial production 9 bbls., total depth 925 feet. Guffey and others' No. 1 Cook, dry and abandoned, total depth 880 feet. Star Drilling Co.'s No. 2 Finley "C", oil sand 900-09 feet, initial production 416,000 feet of gas, total depth 909 feet.

Coleman County

Brown, Ekholm and others' No. 1 Golson, oil sand 1,591-93 feet, initial production 366 bbls. after 12-hour test, total depth 1,593 feet. Roberts Oil Corp.'s No. 1 McClure, dry and abandoned, total depth 3,208 feet.

Eastland County

Humble Oil & Refining Co.'s No. 2 Whitesides, Ranger lime 2,660-2,717 feet, initial production 2,500,000 feet of gas, total depth 2,717 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Empire Gas & Fuel Oil Co.'s No. 4 Fuqua, total depth 3,150 feet, plugged back to 3,035 feet, initial production 28,000,000 feet of gas from 2,925-3,010 feet. Sweeney's No. 1 Locke, temporarily abandoned, total depth 1,000 feet.

Gray County

Atlantic Oil & Production Co.'s No. 1 Reynolds, top pay 2,916 feet, initial production 350 bbls. oil and 8,000,000 feet of gas, total depth 2,969 feet. Continental Oil Co.'s No. 1 Brown, top pay 3,245 feet, initial production 150 bbls., total depth 3,301 feet. Delmar Oil Co.'s No. 2 Smith, top pay 3,171 feet, initial production 400 bbls., total depth 3,235 feet, shot 160 quarts. Southern Exploration Co.'s No. 2 Vaughn, shot 80 quarts, swabbed 75 bbls. oil and 3 bailers water in 36 hours, total depth 3,559 feet.

Hutchinson County

Combination Oil & Gas Co.'s No. 1 Johnson Brothers, top pay 3,048 feet, initial production 240 bbls. first 24 hours, now swabbing 50 to 75 bbls. oil per day, total depth 3,055 feet.

NORTH TEXAS PRODUCTION

Week Ending October 18

Panhandle district—	Bbls.
Carson County	7,100
Hutchinson County	16,660
Gray County	55,045
Moore County	726
Potter County	None
Wheeler County	705
Total production this week	80,236
Total production last week	79,300
Increase	936
Wichita Falls district—	
Archer County	14,185
Baylor County	986
Clay County	650
Cooke County	3,187
Foard County	147
Jack County	2,220
Haskell County	40
Montague County	6,262
Throckmorton County	731
Wilbarger County	17,174
Wichita County	23,416
Young County	11,375
Total production this week	80,373
Total production last week	78,903
Increase	1,470
Ranger district—	
Brown County	5,499
Callahan County	2,946
Coleman County	2,594
Comanche County	1,094
Palo Pinto County	499
Eastland County	4,349
Shackelford County	5,546
Stephens County	5,385
Total production this week	27,912
Total production last week	27,571
Increase	341

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending October 20

CARSON COUNTY

Company, well, farm name, section and block— Remarks—

Empire G. & F. Co.'s No. 1 Jordan et al, C SE, Sec. 94, Blk. 4, I.&G.N. Sur. ..... Location.
Empire G. & F. Co.'s No. 1 Simms, 2,310 ft. N, 990 ft. E, N½, Sec. 12, Blk. 7, I.&G.N. Sur. ..... Drlg. 960 ft.
Empire G. & F. Co.'s No. 1 McConnell, C S½ SW, Sec. 66, Blk. 4, I.&G.N. Sur. ..... Drlg. 2,675 ft.
Gibson Oil Corp.'s No. 1 Foster & Co., C NW, Sec. 24, Blk. 7, I.&G.N. Sur. ..... Location.
Hagy & Harrington's No. 1 McConnell, C NW, Sec. 45, Blk. 4, I.&G.N. Sur. ..... Rotary rig.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur. ..... Rotary rig.
North American Oil Co.'s No. 1 Burnett, C SE, Sec. 98, Blk. 4, I.&G.N. Sur. ..... Drlg. 1,900 ft.
North American O. & G. Co.'s No. 1 McEwen, C SE, Sec. 1, Blk. 4, I.&G.N. Sur. ..... Rigging up.
Shamrock O. & G. Co.'s No. 1 Duncan, 330 ft. S and W, NE, Sec. 6, Blk. 7, I.&G.N. Sur. ..... Drlg. 3,390 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C W. 100 ac., SW, Sec. 84, Blk. 5, I.&G.N. Sur. ..... Rotary rig.

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... Drlg. 300 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N, 985 ft. E, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... T.D. 3,006 ft; contract depth.

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur. ..... Drlg. 2,770 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.& G.N. Sur. ..... Location.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Richardson, 330 ft. N and W, E½, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,995 ft.
British-American and Shell Pet. Corp.'s No. 2 Richardson, 330 ft. NE W½ NE, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,550 ft.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Drlg. 510 ft.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... Spudded and S.D.
Cockrell-McIlroy's No. 2 Allam, 330 ft. N and W, E½ NE, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,595 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Harbaugh, 1,263 ft. N, 330 ft. W, Lot 182, Sec. 114, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,003 ft.
Cree & Hoover's No. 1 Wright, 330 ft. N, 1,000 ft. E, Sec. 12, Blk. 3, I.&G.N. Sur. ..... Location.
Empire G. & F. Co.'s No. 1 McCullough, 1,320 ft. S, 886 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Location.

(Continued on Page 103)

Jackson Interested in Oil Discovery

Hinds County, Mississippi, Well Showed for 10 Bbls. of 13 Gravity. Shows in Tests in Arkansas, Louisiana and East Texas

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 20.—Oil shows, reports of oil shows, from three widely scattered areas in this division made things interesting during a week that was singularly barren of results of any importance in any of the active fields. From the Jackson district of Mississippi came, early in the week, a report that Love Petroleum Co.'s No. 1 Maley, Section 15-5-1e, Hinds County, was an oil well. The hope was father to the thought. More or less a wildcat, the well looks like a duplicate of Gulf Refining Co.'s No. 1 Rainey in Section 13-5-1e, Rankin County, in that it showed for about 10 bbls. of 13 gravity oil with no gas or water from 2,487-90 feet. It was hailed at Jackson as an oil well; but it is not. Not yet. The Gulf well had much gas. This one has not; but the two or three feet more hole planned to be made may or may not change the complexion of the situation. Development of the Jackson gas district, stretching farther afield, uncovering oil is not without the realms of possibility though the shows in the only two wells to make anything like an oil show so far, have been of rather dead oil.

The next show reported was from Anisman and others' No. 1 Hinson estate, in Section 19-4-16, Hot Springs County, Arkansas, near Malvern. It was claimed to have come from 2 feet of sand, total depth 1,354 feet, and to have bailed 20 bbls., 50 per cent salt water. Six and five-eighths inch casing has been cemented at 1,306 feet for a test. This show, intriguing some of the chief scouts here, is reminiscent of the Malvern alarm of 1922-23 or thereabouts.

The third of the shows is a well; the first in the Grand Cane district of DeSoto Parish—6 miles northwest of Mansfield—in which numerous holes have been drilled in the past decade without more than the usual wildcatter's luck. Pelham & Bundy's No. 1 Rhodes, Section 32-13-14, is listed as a pumper making 12 bbls. of oil and 15 bbls. of salt water from 3,009 feet. Nearest production is in the abortive Holly district 12 miles, approximately, northeast, which is producing from 2,800-2,900 feet.

The last item of the excitement was E. & F. Oil Co.'s No. 1 Beck, Section 36-15-26, Miller County, Arkansas. At a total depth of 2,804 feet, about 100 feet higher than Lenz and others' discovery well 2 miles north, it had 3 feet of broken sand and bailed 500 to 600 feet of heavily cut oil out of the hole from above 1,000 feet of salt water. A shake out made the oil 12 gravity—lower than Nevada County crude. There was no gas and the sand is figured a "stray." Two new tests, both west of the Lenz producer, have been started in Miller County. Conway and Grace, of Texarkana, are getting ready to drill a 12,000-acre block centering on Section 23-15-27, 5 miles west of the well, and Winham and others will drill on a 2,000-acre block in Sections 18 and 19-15-26, 4 miles west of the Lenz.

Crosbie and others' scheduled deep hole at Sandyland School on the south edge of Smackover, No. 1 G. L. Murphy in Section 13-16-16, Union County, Arkansas, made its first test at 2,738-40 feet and got 175 feet of 25 gravity oil in 20 minutes with very little gas and no water. The sand is the "Graves"—Smackover "second sand" and the well is in that respect an extension of territory to the south and more or less of a gratifying surprise as previous wells to Smackover known horizons in the vicinity had not done anything like it. Six and five-eighths inch will be cemented and the wildcat possibly called a well and the deep test started on another location.

MISSISSIPPI

Business in the Jackson district of Mississippi seems to be picking up as there were 10 new jobs begun during the week, five in wildcat counties—Grenada, Jasper and Warren, and five in the Rankin County end of the Jackson gas field. One of the two Warren County locations is for Vicksburg Oil Co.'s No. 1 Dornbush in Section 8-18-5, 100 feet south of El Dorado Oil Co.'s (F. N. Henderson and others) No. 1 Dornbush, abandoned as a junked hole at 2,475 feet. Cleve Love and others' No. 1 Ridgeway-McGee in the NE cor. NW SW, Section 2-5-1e, Hinds County, about in the center of the Hinds County section of proven territory, is something of a puzzle. With practically the same surface elevation as other wells in the field, and at the average depth from which other wells are producing, it was dry and has been abandoned; total depth 2,488 feet. At the same time, Lafleur Oil & Gas Co.'s No. 1 Chadwick-Brown in the NE cor. SW NW, Section 11-5-1e, in the southwest corner of proven territory, made 40,000,000 feet of gas from the chalk at 2,436-49 feet.

ARKANSAS

A north Arkansas wildcat in Franklin County proved an entirely new structure 25 miles and more from the nearest gas in the Clarksville district of Johnson County. The well, Red Bank Oil Co.'s No. 1 Edtin (carried as No. 1 Hamm on some reports) in Section 33-10-26, made an estimated 6,500,000 feet of gas at 975 pounds from a total depth of 3,750 feet. Clarksville is 20 miles east of the well, which is 6 miles northeast of Ozark, and the Johnson County gassers are scattered at various distances north, south and southeast of the town. It is the first notable discovery in north Arkansas since Clarksville itself and is fraught with much significance. Also, it tends to direct a little more attention to another north Arkansas wildcat which, while disappointing as to results in the way of production thus far, has afforded much information as to formations likely to be encountered in what is very loosely described as "the Clarksville district." This well is the one being drilled on the Falcon lease in the SE NW, Section 36-7-21, Yell County, by Tegmier & Lockett, who have reached 5,710 feet where they have a fishing job. Location is a mile or so southwest of Dardanelle and several miles removed from the few gas wells that have been completed in Pope County which are, in turn, quite some distance from Clarksville gas. When the time arrives that it is advantageous to develop this north Arkansas gas it will be found that the "Clarksville district" embraces three or four well defined widely separated but very similar (structurally) gas fields of major proportions as to area and productivity that will produce from half a dozen horizons.

NORTH LOUISIANA

Older pools in the division were as active as usual but without much of particular importance developing during the week. Bienville Parish, lately in the limelight because of the show in Triangle-Ruston Drilling Co.'s well near Gibsland, has a new and very wild wildcat test just beginning by Coyle Brothers who have derrick up on the Lawhon land in the SE NE, Section 15-16-8, about midway on a northeast-southwest line between the Triangle-Ruston well and the gas on the east edge of Lake Bisteneau, 12 to 15 miles east of Elm Grove production.

Andrews & Davlin's No. 1 Nattin, a wildcat in Section 15-22-14, Bossier Parish, 5 miles east of Hosston (Caddo) production, had oil shows at 1,500 and 1,510 feet, the first bailing dry and the second having some water with the oil. Autrey Oil Co.'s No. 1 McDade, Section 28-19-11, Bellevue, a deep test, got 22 thribbles of salt water with a show of gas from 2,492-2,606 feet and Louisiana Oil Refining Co.'s deep test in Bellevue proven area, No. 13-B Bodcaw, Section 11-19-11, had gas on drill stem tests at 1,750-62 feet and 1,798-1,826 feet and

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LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)

United Carbon Co.'s No. 1 Boughton, 3,244 ft. E, 4,693 ft. N, SW cor., Sec. 1-16-6 ..... Cmtd. 6-in. 2,285 ft.

United Carbon Co.'s No. 1 J. A. Hemler, 660 ft. W, 66 ft. N, SE cor., Sec. 5-16-6 ..... Location.

United Carbon Co.'s No. 2 C. M. Noble, 805 ft. W, 1,498 ft. N, common cor. Secs. 7, 8 and 37-15-16 in Sec. 37.. Location.

United Carbon Co.'s No. 1 L. Williams, 1,980 ft. S, 1,980 ft. W, NE cor., Sec. 33-16-6 ..... Cmtd. 6-in. 2,285 ft.

SABINE PARISH—PLEASANT HILL

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-12 ..... Drlg. 2,000 ft. (C.D.).

A. C. Glassell's No. 1 Logan Oil Co., 300 ft. E, C, Sec. 23-10-13 ..... S.D. wtr; T.D 1,710 ft.

SABINE PARISH—ZWOLLE

Tom Davis' No. 1 Holliday (was T. D. Allison's), Sec. 31-8-12, Zwolle Townsite ..... S.D. wtr. 1,350 ft.

F. M. Hood's No. 1-B Winston (was No. 2), 700 ft. E, 425 ft. S, NW cor. Sec. 31-8-12, Zwolle Townsite ... S.D. 1,065 ft.

Dixie Oil Co.'s No. 1 Parrott, 330 ft. N, 330 ft. E, SW cor. SE NE, Sec. 26-8-12 ..... Top chalk 2,364 ft; drlg. 2,368 ft.

Dixie Oil Co.'s No. 1 Tatum, 330 ft. N, 330 ft. E, C, Sec. 26-8-12 ..... Drlg. 1,690 ft.

R. L. Gay's No. 1 Peterson (was Posey et al's), Blk. 16, Zwolle Townsite, Sec. 31-8-12 ..... Top marl 2,150 ft. and cmtd. 6⅝-in.

Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12 ..... Rig up.

Lacey Burkett Co.'s No. 1 Danna, 316 ft. E, 200 ft. S, C, Sec. 26-8-12 ..... W.O.S.R. full oil; T.D. 2,404 ft.

Loring Oil Co.'s No. 12 Bowman-Hicks, 330 ft. S, 345 ft. W, NE cor. SE NE, Sec. 33-8-12 ..... W.O.S.R. 2,650 ft.

Loring Oil Co.'s No. 1 Middleton, 200 ft. E, 200 ft. S, NW cor. NE SE, Sec. 26-8-12 ..... Began drlg. Oct. 9; cmtd. 10-in. 100 ft; drlg. 1,058 ft.

Loring Oil Co.'s No. 2 Sabine Lbr. Co., 1,430 ft. E, 340 ft. N, C, Sec. 34-8-12 ..... 100 ft. oil in hole; W.O.S.R; T.D. 2,600 ft.

Lyon et al's No. 1 Neely (was No. 1 Williams), 330 ft. N, 330 ft. W, SE cor. SW SE, Sec. 32-8-11 ..... Cmtd. 6-in. 2,261 ft.

Pelican Nat. Gas Co.'s No. 5 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NW NE, Sec. 11-7-12 ..... Began drlg. Oct. 13; drlg.

W. D. Perritt et al's No. 1 Elliott, 150 ft. N, 150 ft. E, SW cor. SW SE SW, Sec. 30-8-12 ..... W.O.S.R; 1,300 ft. oil; T.D. 2,356 ft.

Pugh-Hickman Drlg. Co.'s No. 1 Sabine Lbr. Co., 350 ft. N, 350 ft. E, SW cor. NW NE, Sec. 34-9-12..... Began drlg. Oct. 8; cmtd. 10-in. 104 ft; drlg. 1,800 ft.

Standard Oil Co.'s No. 1 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. SW NW, Sec. 25-8-12 ..... Location.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA
AVOYLLES PARISH

Company, farm location—	Remarks—
Gas-Con Oil Corp.'s No. 1 Morrow (no check), Sec. 14-2s-4e	Drlg. sand and shale 3,657 ft.
R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e	Cored S.W. sand 3,140-47 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Carter & Dobbs' No. 1 White, 330 ft. N, 330 ft. W, SE cor. SE SE, Sec. 9-18-6	S.D. 1,690 ft.
Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8	Derrick.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft W, NE cor. NE NE, Sec. 28-18-6	Cored sandy shale 2,712 ft.
S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor. Sec. 27-16-9	Cored lime 4,002 ft.
Olds & Smith's No. 1 Brice, 330 ft. N, 330 ft. E, SW cor. SE SE, Sec. 15-18-6	Drlg. sandy shale 1,900 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	S.O. 1,501 ft; bailed dry; S.W. and S.O. 1,510 ft.
Autrey Oil Co.'s No. 1 Johnson, 1,120 ft. N, 200 ft. E, SW cor. NW, Sec. 34-19-11	Drlg. hard lime 2,577 ft.
Autrey Oil Co.'s No. 1 McDade, 200 ft. S, 200 ft. E, C, Sec. 28-19-11	D.S. test sandy lime 2,492-2,606 ft; 22 thribles S.W. and show of gas.

CADDO PARISH

Tex.-La. Prod. Co.'s No. 1 French, 1,270 ft. N, 675 ft. E, SW cor. NW, Sec. 34-23-16	Drlg. gummy shale streaks of slate 2,668 ft.
Tex.-La. Prod. Co.'s No. 1 Wall, 2,715 ft. N, 1,980 ft. W, SE, cor., Sec. 33-23-16	Began drlg. Oct. 9; cmtd. 12½-in. 840 ft.

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e	Coring 1,967 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6	Rig up.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7	S.D. 2,200 ft.
Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W, NE cor., Sec. 27-20-8	S.D. 2,200 ft.

CONCORDIA PARISH

A. C. Glassell's No. 1 Pecania Plantation, 25 ft. S, 25 ft. W, NE cor. irregular Sec. 46-8-9	Location.

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Pipe Line Construction News

NATURAL GAS PROJECTS INTEREST PIPE MILLS

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 20.—No additional line pipe buying of size has been reported in the past week. The last order was reported early in the month, 120 miles of 24-inch taken by Republic for the Continental Construction Corp.'s gas line in Nebraska and Iowa.

There are various natural gas piping projects on foot but there is no definite opinion as to when any of them will come to a head. It is said that in Texas and Oklahoma line pipe laying will proceed during the winter, while there is no likelihood of that in the north, although it seems to be physically possible, the extra expense being a drawback.

So far as known, all line pipe units, fire weld, electric weld and seamless, are producing to the best of their ability. Some of the newer units are not yet up to eventual capacity, as it takes time to get into full swing, but all are in commercial operation. Producers are as a rule not booked at all far ahead but production is being pushed to take advantage of the remaining open weather before winter sets in. On a general average producers are probably booked four to six weeks ahead. In all probability there will be quite a lull during the winter as there was last winter but there will be some production right along.

Demand for standard pipe is running a shade heavier than in September, there being a little extra seasonal demand from the approach of winter. Jobbers have very light stocks and are buying in small quantities at frequent intervals. Doubtless there will be a dull winter in standard pipe as usual.

The Steel corporation's statement of unfilled obligations did not throw any clear light on the situation. There was a September decrease of 155,866 tons, following an August decrease of 441,851 tons. It is believed there was much canceling by the corporation of old contract tonnage, unlikely to be specified, in August, while there may have been some in September. It is reasonably clear there was not as much contracting in September for fourth quarter as was supposed. This is evidenced by the conduct of prices, which have shown some fresh weaknesses or rather have failed to show the added strength claimed in September, when the idea was that if large buyers of bars, shapes, plates, sheets and strips could be placed under contract it would be relatively easy to maintain prices on the ordinary current run of business.

Steel producers observe that their customers are more hopeful as to the volume of their trade than a month ago. There will be further decreases in steel requirements to the end of the year, but they will be chiefly seasonal in character.

SINCLAIR-TEXAS CONTRACTS

Meader and Whittaker of Wichita Falls, Tex., has been awarded the contract for the construction of the south half of the pipe line being built by the Sinclair-Texas Pipe Line Co. from Oklahoma City to Coffeyville, Kans. This company is at work on sections of the line from Oklahoma City to the section near Jennings, Okla. Truman Smith Construction Co. of Eldorado, Kans., was awarded the contract for the remainder of the line and is at work on its section.

IMPERIAL PLANS LINE

CHATHAM, Ontario, Oct. 20.—The Imperial Oil Co., Ltd., is preparing to construct a pipe line from the Alberta end of the Red Coulee Field in Alberta to its tank farm at Coutts, Alberta, to handle production from that end of the field.

NATION-WIDE DISTRIBUTION OF GAS FORESEEN BY BUREAU OF MINES HEAD

By Scott Turner
Director, United States Bureau of Mines*

To be successful, human exertion employed for the creation of value requires power and heat; the ability to produce concentrated power in great quantities has resulted in the relatively recent industrial development that is so profoundly affecting the world. In our commercial history, we have advanced through several stages in the selection of the most suitable fuels, continuously striving to increase the flexibility and range of energy transmission.

The easy distribution of light, power and heat is the leading factor in the decentralization of industry which promises to correct some of the serious evils that have followed in the footsteps of our commercial development. The distribution of fuel in quantity in so convenient a form and with such an attractive reliability factor as can be had with gas meets the modern conception of efficient service.

Natural gas has been used in this country for more than a century, but recently it has attained a prominence far in excess of anything known in its earlier history. We may consider that we are now getting into our real stride in the utilization of our natural gas resources.

In a country like the United States, wherein we are accustomed to mammoth achievements, we may be inclined to accept casually the noteworthy technical and economic advances which have resulted in the expansion of natural gas distribution. About three years ago, the transmission of natural gas a distance of more than 250 miles from its source was first accomplished, and this was really a noteworthy engineering feat. Today, this useful commodity is being transported twice that distance, and lines are being laid which will carry gas more than 900 miles from the points of occurrence. Let us not take such outstanding improvements too much as a matter of course; the industry should be congratulated on its long steps forward.

Construction Improvements

Improvements in mechanical devices used in pipe line construction have contributed to wider distribution. Ditching machines have replaced pick and shovel methods; tractors and other machines especially designed for the work are used in handling pipe; automatic field welding processes have been developed; improvements in pipe manufacture and quality of material have increased our ability to transport gas under high pressures. These are some of the engineering contributions.

On the economic side, company surveys have indicated that assured supplies are available to meet certain new demands; with this knowledge as a background, the industry has received the needed financial support. By creating an increased demand for steel products, the construction of these pipe lines has in itself been a factor of social and economic importance.

Recent developments are largely associated with three principal gas-producing areas: The Monroe-Richland region in Louisiana, serving the southeastern portion of the country; the territory including the Texas and Oklahoma Panhandles, southwestern Kansas and adjacent areas which may be combined to serve the central United States; and the California fields, furnishing gas for distribution on the Pacific Coast. While developments in the Rocky Mountain region indicate the presence of major supplies of gas, as yet these have not been brought to anything like complete development. From the region surrounding the Texas Panhandle, lines are now being built to serve Indianapolis, Chicago, St. Paul, Minneapolis, and numerous communities in the intervening territory.

Upon the completion of these new lines, and when connections have been made with some of the older systems, nation-wide distribution of natural gas will be well within the bounds of possibility, and the quantity of potential energy that can be transmitted by such pipe line systems may only be expressed in figures so large as to remind one of astronomical computations.

Such extension of natural gas distribution, supplementing our great electrical distributing systems at points where it is most needed, will lead to the establishment of many new social relationships. The dependency of numerous communities for fuel upon a single producing region will focus attention upon the conditions of production and distribution in that region. Communities served by natural gas will thus become interested in the efficient production and utilization of

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*Delivered before the twelfth annual convention of the American Gas Association, Atlantic City, N. J.

BOURBON PLANS LINE FROM MAPLETON FIELD

The Bourbon Pipe Line Co. is to build a pipe line a distance of 43 miles to Butler, Mo. This pipe line will supply such communities as Mapleton, Fulton, Prescott—all in Kansas (for which the Bourbon Natural Gas Corp. has franchises), and Hume, Rich Hill and Butler, Mo. This hook-up is a nucleus of what is planned by that company.

The Bourbon Natural Gas Corp. controls approximately 4,000 acres in what is known as the Mapleton Field, near Mapleton, Kans., covering several sections in Townships 23 and 24, Range 23. with property developed so far, approximately 20 wells and open flow of 7,000,000 feet of gas per day. There are approximately 25 additional wells to be drilled on the property. This gas comes from what is known as the Bartlesville and Burgess sand horizon, average depth of 560 feet. The company believes an open flow production can be developed there to the extent of 15,000,000 to 20,000,000 feet. The field superintendent, J. E. Elliott, is located in Iola, Kans.

LINES TO DOBROWOLSKI AND NEW. S. R. C. POOL

SAN ANTONIO, Tex., Oct. 20.—Pioneer Oil & Refining Co. will begin at once on construction of an extension of its 4-inch pipe line to the new Dobrowolski Pool, 8 miles east of San Antonio. The length of the line from Southton Pool where the company's line ends now to the new pool is about 5 miles. Production from shallow sands at around 700 feet in a couple of dozen wells in the Dobrowolski Pool is now about 5,000 bbls. per month.

Magnolia Pipe Line Co. will complete this week the extension of its line to the new S. R. C. Pool in northwestern Duval County. The length of the line is about 8 miles starting in the Schoolfield-O'Byrne Pool on the main Mirando-Luling line and running northwest to Survey 293.

NEW LINES TO VAN POOL MAY FOLLOW HUMBLE

FORT WORTH, Tex., Oct. 20.—Many reports have been broadcast in regard to different pipe line companies contemplating entering the Van area, some of the latest reports stating that the El Dorado-Shreveport Pipe Line Co. may lay a line into the area from Louisiana, and the Arkansas Fuel Oil Co., which has a gas line about 20 miles to the east, is said to be figuring on converting this line into an oil line and extending it to the Joiner Pool. It has also been reported that the Magnolia Petroleum Co. have been discussing the purchase of the well and acreage belonging to Mr. Joiner and associates, but these are all mere rumors, with no basic facts obtainable.

Any pipe line company may expect to wait until more of the area is proven by other wells before it makes a definite move to lay a connecting line to the pool, and one company, the Gulf Pipe Line Co. which has a trunk line from Oklahoma to the Gulf Coast running within about 5 miles to the west of the Joiner discovery, may decide to connect with the new area. The Humble Pipe Line Co. is starting the construction of a 10-inch welded line from the Van Pool to the Louisiana line, the line to pass within about 20 miles of the Joiner well, and this company may also be considered as a possible purchaser in the pool, for expense of laying 20 miles of connecting line in this locality would not be as costly as in many other parts of the State, and would no doubt merit the company's entrance into the high gravity sweet oil area.

The Standard Pipe Line Co. of Louisiana will lay a line from a point near Shreveport, where it has a tank farm and pump station, to the Louisiana-Texas border to connect with the Humble line. Total length of the line will be near 110 miles, and one station will be constructed for booster work.

Right of way is now being purchased for Humble's portion of the line from Van, a distance of around 90 miles. The Humble Pipe Line Co. will also build the main pumping station, and lay gathering lines in the field as its sister company, the Humble Oil & Refining Co. which has five producers and five drilling wells in the Carroll district and one pumper in the unit plan also has about 900 acres under lease in the field. Humble Oil & Refining Co., with Gulf Production Co., has 7.75 per cent of the acreage in the original unit.

It is not known at this writing as to what lease will be chosen as the tank

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WELDING CONTRACTS AWARDED

The Welding Engineering Co. of Bartlesville, Okla., announces that it has been awarded contracts for electric welding two additional sections on the Continental Construction Corp.'s 24-inch line from Amarillo to Chicago, as follows:

Section No. 1—50 miles in the Texas Panhandle—general contractors, Sheehan Pipe Line Construction Co. Section No. 5—113 miles in Iowa—general contractors, Henry L. Lemons, Inc.

With the contracts previously awarded, this makes a total of 303 miles of electric welding awarded to the Welding Engineering Co. on this line.

NEW ALBERTA PIPE LINE

CHATHAM, Ontario, Oct. 20.—Announcement has been made that Imperial Oil, Ltd., will build a pipe line to deliver production from the Red Coulee Field to its tank farm at Coutts, Alberta. Work on the line will, it is expected, be well under way this month.

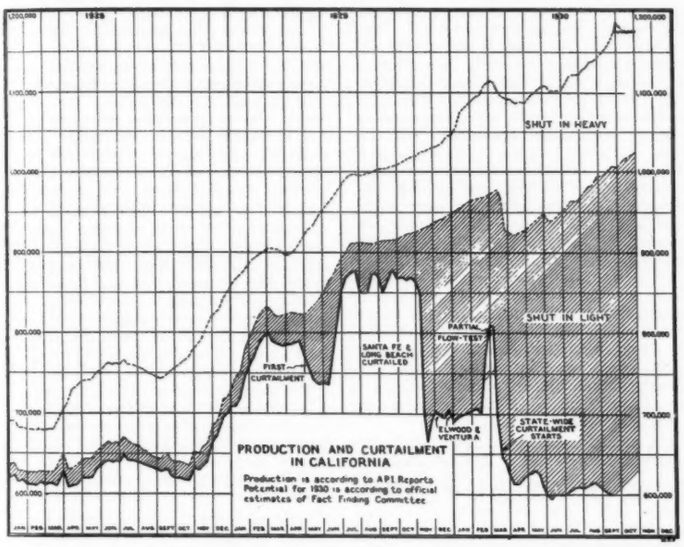
Control of California Curtailment

Fields That Most Nearly Approach Unit Operation Are Least Affected. Principles Governing Proration Studied

By Robert E. Allen
Assistant Umpire*

The organized curtailment of California oil production is not yet one year old but during its first year it has accomplished so much that it is now firmly established as an agency of economic efficiency. The principle of co-operative curtailment has been adopted by other states and it is safe to say that the principle will continue as long as the demand for petroleum is notably less than the potential production. It is interesting to note that this same principle of regulating supply to meet demand is now being urged for other industries such as agriculture and mining.

Since October 31, 1929, when curtailment was instituted by the oil producers of Santa Fe Springs and Long Beach in an effort to avert the disaster of ruinously low prices which confronted them, there has been a constant and increasingly effective curtailment program in California. Prior to that time a notable effort toward the restriction of oil production was made under the direction of F. C. Van Deinse during the early summer months of 1929. A considerable reduction of oil output was recorded as the result of this effort, but due to incomplete co-operation and to the discovery of still deeper zones at Santa Fe Springs, the effort was abandoned and flush field production became unrestrained and prices soon fell to low levels.



Showed Way Out

This initial curtailment movement was educational and experimental. It showed all operators a way out of their overproduction difficulties and developed the principles followed in later curtailment efforts. Thus it was that only a few days after their oil had been reduced to 60 cents a barrel, the operators of Santa Fe Springs got together and agreed to restrict their current production of more than 270,000 bbls. daily to not more than 150,000 bbls. daily. The operators at Long Beach followed the same course a few days later and agreed to limit their production to not more than 110,000 bbls. daily.

The Santa Fe Springs operators chose H. P. Grimm as umpire and director of their proration program. Neal H. Anderson was chosen umpire for Long Beach. Since that time, as the need for curtailment has increased, practically every field of the State has come under the curtailment of these two umpires. Curtailment of the Elwood and Ventura Avenue production became necessary in December, 1929, and in February, 1930, a general committee was established to direct the application of curtailment to every important field of the State.

A five-day flow test to determine the actual potential production of several important fields was conducted during the third week of February. As a result of this flow test, during which state production jumped to 806,000 bbls. daily, an engineering advisory committee determined the true potential of the State to be 1,095,000 bbls. daily.

California had been allotted a production of 610,000 bbls. daily by President Hoover's committee on petroleum economics for the survey of the oil industry's requirements for 1930. The California general committee set the allowable production of the State at 609,000 bbls. daily and directed all field committees and the umpires to prorate their production on that basis, effective March 1, 1930.

Quota Lowered

Under this program, the production of the State showed a notable decrease. February production averaged 745,916 bbls. daily; March, 635,483 bbls. daily; April, 625,625 bbls. daily, and May, 614,337 bbls. daily. Only for a few days did production drop to the required 609,000 bbls. daily. This failure to reach the objective, together with a steadily increasing state potential and a slight recession in demand, forced the general committee to lower the State's oil quota to 596,000 bbls. daily, which was a compromise figure between the previous 609,000 bbls. daily quota and a recommended quota of 575,000 bbls. daily.

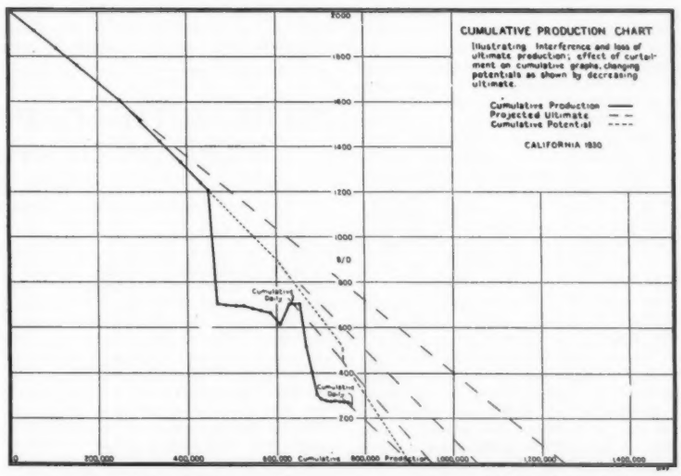
The new quota of 596,000 bbls. daily became effective May 16, and, like the previous quota, became a goal to strive for rather than to attain. On only a few days between May 15 and September 1 did California production fall below 597,000 bbls. daily. A steadily increasing potential and the development of the Playa Del Rey Field, together with numerous big wells at Long Beach and Elwood, all combined to keep the state's production above the mark set for it.

The results obtained to date from the curtailment of California oil production may be seen by reference to the accompanying graph which is self-explanatory. It is of course difficult to place an actual cash value on any project as conditional as curtailment, but Herbert R. Macmillan, president of the California Oil & Gas Association, has stated that the oil producers of California benefited to the extent of at least $88,000,000 by state-wide curtailment during the first six months of 1930.

Application of Proration

Soon after the beginning of co-operative curtailment in California it became apparent that if proration was to be uniform and consistent in its application it would have to be accomplished by certain definite rules. As there were no rules in existence at this time governing oil proration as practiced in California, it became necessary to assemble certain provisions of various curtailment agreements together with important rulings of the general committee, the field committees and the umpires. This was done and a set of rules or code of procedure was thus established that, with occasional amendments, has governed the application of curtailment in California. Some of the more important paragraphs of this code will be quoted hereafter. For instance, the purpose and basis of proration are defined as follows:

A.-1. Purpose of proration—The regulation of crude oil supply to normal demand shall be accomplished by equitably distributing among contributory fields and operators the total production required. This division of market outlet is commonly called proration of production.


CUMULATIVE PRODUCTION CHART
Illustrating interference and loss of ultimate production; effect of curtailment on cumulative graphs, changing potentials as shown by decreasing ultimate.
Cumulative Production
Projected Ultimate
Cumulative Potential
CALIFORNIA 1930

A.-2. Basis of proration — Proration shall be based proportionately upon the actual or estimated potential production of any well, lease or field for any given period of time.

Inasmuch as California proration is based upon the potential production of wells, leases and fields the following paragraphs from the code may be of interest:

B.-1. Definition of potential—The potential production of any well or lease is the average amount of oil the property is capable of normally producing under conditions prevailing at the specified time.

B.-2. Actual potential—The actual potential of a well shall be ordinarily established by taking the average of the last four of first five full days of normal production after completion or during any subsequent flow test. Certain modifications may be made in the application of this rule when conditions require.

B.-3. Estimated potential—The estimated potential of any well or lease shall be determined by projecting the normal past performance of the well or lease. Consideration must be given to any actual or anticipated change in the conditions affecting the producing unit.

B.-4. Units of potential—In the estimation of potentials all large and recently completed wells shall be considered individually, but all settled production may ordinarily be estimated by leases.

Estimation of Potentials

It is evident that the accurate determination or estimation of potentials is one of the most important elements of proration. Open flow tests of entire fields are frowned upon by the general committee as being generally unfeasible on account of the large amount of surplus oil that results. It is entirely possible for a new well to establish its initial potential and then be prorated entirely upon the basis of its estimated potential until it goes on the pump or the gas lift, hence it is necessary that the greatest accuracy and the best judgment be exercised in the estimation of potentials. An explanation of the methods used in estimating potentials will be given later.

Various fields and groups of fields have been assigned differing amounts of allowable production by the general committee. Thus Group 1 comprises the nine flush fields of the State which are not regarded as a menace. Ordinarily the total potential of this group averages about 660,000 bbls. daily, but since July 1 it has been steadily increasing until it is now well over 700,000 bbls. daily. Regardless of the potential of Group 1, its allowable production cannot exceed 355,000 bbls. daily, under the rule adopted May 15, 1930, and still in effect on September 10, 1930. The distribution of this allowable will be explained in a subsequent paragraph. In Group 3 are the so-called menace fields of Kettleman Hills and Playa Del Rey which are given special attention by the general committee. In Group 2 are the other 30 fields of the State with variable allowables based upon conditions prevailing in each field.

Allotment of Fields

About the middle and near the end of each month the umpires submit to the advisory committee a statement of the estimated potential of each field for the ensuing half month. After these potentials are approved, the allotment of each field is prorated among the various producers in that field in direct proportion to their respective potentials. Thus the percentage curtailment required may vary from 10 to 70 per cent between different

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*Before Pacific Coast meeting, petroleum division, A.I.M.E., Los Angeles, Calif., October, 1930.

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Yates Outstanding Proration Example

Illustration of Benefits to Be Derived From Orderly Development and Operation of Field Under Effective Rules

By H. C. Hardison
The California Co.*

The Yates Pool, Pecos County, Texas, has greater potential capacities than any other field in the United States. This field is notable for the large return it yields on capital invested, for low production costs and for the orderly and conservative manner in which it was developed and continues to be operated.

The proven area is 20,000 acres and there are 392 producing wells, or approximately one well to 50 acres. The theoretical daily potential is 5,500,000 bbls. as determined by one-hour open flow gauges. Individual well gauges vary from a few barrels to 8,500 bbls. per hour, and well depths range from 1,000 to 1,800 feet. The greater part of the production is from a very porous limestone, and by agreement no productive well has penetrated the lime more than 225 feet. The forces driving the oil from the formation to the surface are hydrostatic head, expanding gas or a combination of the two. The degree of effectiveness of either depends upon the structural position of and porosity encountered in the individual wells. Approximately 95 per cent of the wells in the field flow naturally. The pipe line outlet of the field at the present time is 100,000 bbls. per day, which is less than 2 per cent of the daily potential.

Original Plan

It became evident during the first year of the development of this field that operators would have to devise a scheme to allocate pipe line runs equitably among their different properties. When the idea of proration was first inaugurated, the matter of spacing wells was given consideration. This was given up through fear of legal difficulties. Storage was also a question that was given considerable thought, and a plan was finally developed which went into effect October 1, 1927. It was decided that the oil runs should be prorated according to the total potential capacity of all the wells which the several operators had in the field. The potential capacity of the wells was measured by a one-hour open flow gauge. All runs to storage by an operator were deducted from his daily allowance.

This plan stimulated drilling, because regardless of holdings or other value, the outlet from each property depended entirely upon the potential of the wells. The only thing gained by this scheme was that the outlet was divided among all of the producers, but it did not reflect the value of the holdings and placed a premium on competitive drilling which was poorly distributed. Each operator concentrated drilling upon what he considered his best acreage. Under this plan one small area was drilled to an extent of one well to 12½ acres. Therefore, since acreage was decidedly an element for consideration, it was decided to create a plan on an acreage basis.

The services of an independent geologist were obtained who outlined the proven field. All acreage within these limits was given consideration. If an operator had acreage outside of these limits which he thought to be productive, it was necessary for him to drill wells to determine this fact. This new scheme was put into effect on January 1, 1928.

Difficulties Encountered

Difficulty arose from the fact that some companies held both good and poor acreage, while others were confined to relatively small parcels of very good acreage. A few arbitrary adjustments were made to compensate operators all of whose acreage had much higher potential than the average potential of the field. These adjustments were a constant source of irritation because there was no logical basis upon which adjustments could be made.

A fairly prolific area near the top of the structure was drilled to the extent of one well to 14 acres. These operators had undeveloped acreage near the edge of the field but within the proven acreage. Oil allowed them for this acreage was withdrawn from the top of the structure. These heavy withdrawals tended to cause a rapid local decline of pressure which would set up undue drainage from neighboring acreage.

It, therefore, became evident that there were certain principles which must be guarded in a proration scheme; first, that the potential must be the governing factor and considered on an acreage basis; second, in order that the acreage drilled should reflect the condition of the parcel, each type of acreage must produce its own oil.

Present Plan

In July, 1928, the present plan of proration was put into effect. Since there was an average of one well to every 100 acres, the field was divided as nearly as possible into 100-acre units. Any leases smaller than this were considered as units except in cases where a fractional unit is contiguous to a full unit held by the same operator. In this case a split unit was considered and prorated accordingly—that is, a lease consisting of 140 acres was given credit, for proration purposes, with 1.4 units, while a 40-acre lease was given a full unit credit. Under this plan each unit determined its own potential and produced its own oil. The thought uppermost in choosing the 100-acre units was to devise a scheme in which the minimum amount of additional drilling would take place. The acreage factor was injected into the scheme for two reasons: (1) That it was a defense to small wells as it was recognized that no well should be forced to produce below an economic limit which would permit it to remain an asset; (2) had the large wells been allowed to flow under normal conditions, the outlet would have been so enormous that it would have been physically impossible to pipe the oil away.

Under this plan 25 per cent of the pipe line outlet was divided equally between all of the producing units in the field, and the 75 per cent was prorated according to the average unit potential. The average unit potential is the figure obtained by adding the daily potentials of all the wells on the unit and dividing the sum by the number of wells. The daily potentials of the wells are determined by gauging each well, open flow, for one hour every six months. The ratio that the average potential of each unit holds to the sum of all the unit average potentials, multiplied by 75 per cent of the pipe line outlet, gives the potential allowance of the unit. The sum of the unit allowance and the potential allowance is the total allowance for the unit. Each unit must produce oil allocated to it, and offset wells on neighboring leases are produced ratably to their potentials. It is believed that this method distributes withdrawals equitably and prevents the uneven diminishing of pressure.

The pipe line outlet at the time this plan was adopted was approximately 3 per cent of the daily potential of the field.

Method of Administration

This scheme of proration was placed in effect by an order of the railroad commission of Texas, and is administered by an umpire appointed by that body. The commission's order specifies an advisory committee consisting of one representative from each company. This committee appointed an executive committee from its members to work with the umpire in administering the order.

During the early development of the field the operators appointed a committee of company engineers to make a study of conditions and report their findings. The report placed considerable stress on gas-oil ratios and rock pressures. The latter was determined by gauging the shut-in pressure at the bottom of the hole with a pressure bomb. The average of several of these tests was 700 pounds per square inch. Casing programs were discussed and recommendations were made to adequately protect shallow fresh water sands from contamination and also insure against loss of oil from the high-pressure lime pays to the overlying porous strata.

A study of the field problems has been continuously carried on by several of the company engineers. The engineering committee became active again in June, 1929, to continue studies co-operatively and in particular to report on some method by which the potential of the wells could be determined without opening the well for a one-hour period.

The committee proposed such a method in a report submitted December, 1929, and recommended further study to test the method. The confirmatory tests are now in progress.

The field engineers' report also discussed the occurrence of oil and of water at definite horizons in the lime. It was pointed out that these producing horizons had definite intervals between them, and the edge waters in four of these were mapped. The operators recognizing that rapid withdrawal of oil in the prolific area would cause an uneven advance of edge waters and trap off large quantities of recoverable oil, have never considered raising the field outlet above 136,000 bbls. per day. Well spacing was discussed and it was recommended that sufficient wells be drilled on edge leases to insure the even encroachment of edge waters. As a result 35 additional wells have been drilled for this purpose.

The proration umpire receives water reports from all companies each month, through which he keeps check on the advance of waters and recommends the necessary plugging to the operators. Such waters have been completely shut off in a number of wells. Water control is being effected on certain edge wells by restricting the flow to such an extent that clear oil is being produced.

Subsurface Conditions

The study of subsurface conditions has indicated that in certain areas in the field there is a gas sand just above the lime pay. Operators have lowered casing points below this sand in order to reduce the gas-oil ratios. Others who had cemented casing above this point are now taking steps to set packers on tubing between the gas sand and the lime pay to conserve gas.

The operators, realizing the advantages of conserving formational gas, have adopted a tubing program to tube all wells having a higher gas-oil ratio than 450 feet per barrel, which was the average for the field. Results from wells

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*Before petroleum division, A. I. M. E., Tulsa, October, 1930. Copyright, 1930, by A.I.M.E., Inc.

DIFFICULTIES IN PRORATION IN TEXAS EXPLAINED BY TECHNICAL ADVISOR

By David Donoghue
Technical Advisor, Central Proration Committee of Texas*

The legal background of proration in Texas is based on the State constitution as amended August 31, 1917, making it incumbent upon the legislature to pass laws appropriate to the conservation and development of the natural resources of the State. Laws were enacted in 1919 establishing the oil and gas division of the Railroad Commission of Texas and extending the powers of the commission over the common carrier pipe lines. In 1930 the new pipe line and common purchaser bill was passed. The authority of the commission is questioned by many lawyers in nearly all matters relating to the production of oil and gas, except the prevention of actual physical waste of these minerals. No questions involving the commission's authority in matters affecting present problems have been presented to the supreme court. It is considered by many that the safer course for the industry is to operate under the present acts, rather than run the risk of having them declared unconstitutional and then having them replaced by laws perhaps more drastic and enforceable. Thus it is that most subjects that relate to proration are first discussed by the operators affected and their views suggested to the Railroad Commission, who, after hearing evidence, enter such orders as may be deemed best.

It is not necessary here to go into the economic reasons for proration beyond the good and sufficient one that crude buyers are not in the market for all the available production. The situation became acute in the early part of this year and at the request of the Railroad Commission a committee representing the Mid-Continent Oil & Gas Association, Texas division, the Independent Producers Association and crude buyers was formed. This committee appointed a technical advisor, whose duties are those of statistician, engineer and secretary.

Survey of Situation

This joint committee undertook a survey of the situation and made a report setting forth the supply and demand for crude oil in each of the districts of the State. The figures assembled indicated a supply of 76,000 bbls. per day in excess of demand. To this excess an additional 50,000 bbls. was arbitrarily added and it was proposed that production should be cut from 863,000 bbls. to 737,000 bbls. per day. A report to the Railroad Commission was prepared recommending that production in each district be reduced in varying amounts, depending upon market demand and other factors. After several hearings, the Railroad Commission issued an order, effective August 27, directing that production be reduced to 750,000 bbls. per day. Committees in each district and field were appointed where they had not already been organized and efforts were made to persuade all operators to adopt proration methods which would receive the approval of the Railroad Commission. Where this was successful in whole or in part, an umpire was selected and given an official status by confirmation by the commission. It is the duty of the umpire to see that every lease has a connection; that potentials are fairly taken;

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*Before Petroleum Division, A.I.M.E. Tulsa, October, 1930. Copyright, 1930, by A.I.M.E., Inc.

NEW LOCATIONS IN RUSK COUNTY SURROUNDING JOINER DISCOVERY

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 20.—Three derricks are up and material is being moved in for two more locations surrounding C. M. Joiner's No. 1 Mrs. Daisy Bradford in the Juan Ximenes Survey, Rusk County, all of them to go to the Woodbine sand, and enough tests in all directions to prove up the field as either another major Woodbine sand field, like the Van Field in Van Zandt County which was opened to production a year ago, or only a small producing area from the sand which many geologists have believed as fingering out on this side of the basin.

The Joiner well, which came in the night of October 9, has been producing spasmodically during the past week, falling off on production and refusing to flow, then staging a comeback and producing better than 300 bbls. daily. Many believe its antics due to mechanical troubles rather than physical troubles and lack of oil in the sand, and tools were being rigged up to pull the tubing once more to try to ascertain just what is preventing a steady flow through the 2½-inch tubing which was set with a packer last week, when much of the 1,000,000 feet of gas per day was escaping.

The Arkansas Fuel Oil Co., which purchased considerable acreage around and near the Joiner well, has erected a derrick on the J. A. Worrell farm in the Juan Ximenes Survey, a short distance southeast of the discovery. H. L. Hunt has also put up a rig on the G. T. Moore farm; L. L. Smith and others have material on the ground for a test on the W. H. Worrell farm in the Juan Ximenes Survey; Lloyd-Tex Oil Co. has material moving in on the M. W. Camp farm northwest of the Joiner farm and Frank Foster and others have a rig up on the Ashby farm in the Juan Ximenes Survey, west of the discovery.

Ed W. Bateman and others are spudding No. 1 Della Crim in the Elridge Sevier Survey, Rusk County, approximately 4 miles southwest of the town of Kilgore, and about 10 miles due north of the Joiner discovery.

Ten producers were completed in the Van Field and Carroll district, Van Zandt County this week, Humble Oil & Refining Co.'s No. 2 Carroll in the William Daniel Survey, an offset to No. 1 Carroll, the extension well of this area, coming in for an initial production of 315 bbls. the first three hours on an eleven-sixteenths-inch choke at a total depth of 2,925 feet, making one of the best wells in the Van Field. Anderson and Fogelson's No. 1 Mrs. W. A. York, midway between the unit plan and Carroll extension wells, was another big well completed this week. It made an initial production of 112 bbls. per hour at a total depth of 2,932 feet.

An interesting location was made in Anderson County by the Humble Oil & Refining Co. near the center of its Blackfoot block, the location falling about 2½ miles northwest of the Roeser and others' No. 1 Moody which recently attracted much attention when it struck oil and gas showings. The new location was staked 660 feet north and east of the northwest corner of the Mrs. Russell's 124-acre tract but on the McGaffrey land in the I.&G.N. Survey. This area was worked by instruments and core drilled, and appears to be one of the most likely looking areas for production in East Texas, although the former dry hole mentioned helped to condemn the area.

East Central Texas Production

Daily average production of the pools in the East Central Texas area for the week ending October 18 follows:

Boggy Creek	3,290
Cedar Creek	55
Currie	320
Hill County	30
Mexia	3,988
Minerva	545
Nigger Creek	155
Powell	5,312
Richland	150
Thrall	40
Van	27,521
Wortham	595
Rusk County	198
Total	42,199
Week ending October 11	43,311
Decrease	1,112

COMPLETIONS IN EAST CENTRAL TEXAS

Panola County

Texas Louisiana Production Co.'s No. 1 O. M. Laurence, dry and abandoned, total depth 3,016 feet.

Van Zandt County

Anderson and Fogelson's No. 1 Mrs. W. A. York, top Woodbine sand 2,685 feet, initial production 112 bbls. per hour, total depth 2,932 feet. Pure Oil Co.'s No. 1 Neills, initial production 60 bbls., eleven-sixteenths-inch choke, total depth 2,928 feet. Humble Oil & Refining Co.'s No. 2 Carroll, initial production 315 bbls. first three hours through eleven-sixteenths-inch choke, total depth 2,925 feet. Pure Oil Co.'s No. 2 J. F. Crim, initial production 144 bbls., total depth 2,927 feet. Same company's No. 3 A. R. Tunnell, initial production 108 bbls., total depth 2,951 feet. Same company's No. 9 J. T. Thompson, initial production 120 bbls., total depth 2,936 feet. Same company's No. 1 W. H. Cook, initial production 96 bbls., total depth 2,966 feet. Same company's No. 11 R. L. Wells, initial production 96 bbls., total depth 2,926 feet. Same company's No. 1 F. B. Smith, initial production 243 bbls., total depth 2,930 feet. Same company's No. 1 P. E. Neils, initial production 60 bbls., total depth 2,928 feet.

EAST CENTRAL TEXAS WILDCATS

Week Ending October 18

FANNIN COUNTY

North American Pet. Co.'s No. 1 Allen, 700 ft. N and 150 ft. W in N. R. Broadfoot Sur., 9 miles N of Honeygrove ..... Shut down 1,400 ft.
E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur., in Juana Telgando Sur., 1½ miles NE of Lomasco ..... Shut down 1,500 ft.

GREGG COUNTY

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,200-ac. tract, Martin Lant Sur. ..... Fishing 1,218 ft.
J. E. Terrell's No. 1 J. K. Lathrop, 730 ft. from N and 1,241 ft. W of Lathrop 96 acres, William Robinson Sur. ..... Building rig (rotary).

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-ac. tract in A. York Sur. ..... Shut down 3,000 ft.
E. L. Chapman's No. 1 Cade, 1,662 ft. from N and 2,694 ft. from W, 600 ft. W of No. 1, J. B. Dorsey Sur. ..... Set 10-in. 107 ft.
George Pace et al's No. 1 Mrs. Sarah Anthony, 273 ft. N and 132 ft. W of SE cor. of S. Anthony 632-ac. tract, Jose W. Battvan Sur. ..... Drlg. 3,315 ft.
Texas State Oil Co.'s No. 1 Skinner, 150 ft. from E and 150 ft. from S, J. Henshaw Sur. ..... Drlg. 500 ft.

HUNT COUNTY

Branson et al's No. 1 West, 350 ft. N, 350 ft. W of W 60-ac. tract, Jas. Rooces Sur. ..... Shut down 3,250 ft.
Mamie S. Hammond's No. 1 W. H. Adams, center of survey, west of Branson Sur., J. A. McFarland Sur. .... Derrick blew down.

KAUFMAN COUNTY

Shaw & Alexander's No. 1 Barrow, 2,360 ft. S and 200 ft. W of R. A. Terrell Sur., 4½ miles N of McCoy. ..... Drlg. 3,320 ft.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in F. Finley Sur. ..... Shut down 960 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RUSK COUNTY

Clem S. Clark's No. 1 Maude R. McCafflin, 427 ft. from N, 166 ft. from W of farm, Ellie Blackburn Sur. .... Shut down 3,000 ft.
Arkansas Fuel Oil Co.'s No. 1 J. A. Worrell, 7,361 ft. from N and 5,361 ft. from E, Juan Ximenes Sur. .... Building derrick (rotary).
Frank Foster et al's No. 1 Ashby, 195 ft. from N and 1,204 ft. from W of 75-ac. tract, Juan Ximenes Sur. ..... Rig up.
Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N and 420 ft. from E of SE cor. of B. Smith Sur. ..... Derrick.
C. M. Joiner's No. 3 Bradford, Juan Ximenes Sur. ..... Flowed 1,847 bbls. last 7 days.
Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Derrick down.
Rosenfield's No. 1 L. A. Pinkston, 150 ft. from N and 262 ft. from W of Pinkston 77-ac. tract, Maria V. Pena Sur. ..... Shut down 2,015 ft.
Tex-Lloyd Oil Co.'s No. 1 Camp, 150 ft. from E and 150 ft. S of 5-ac. tract, Juan Ximenes Sur. ..... Location (rotary).
L. H. Hunt's No. 1 Bradford, 1,269 ft. W and 1,083 ft. S of SW cor. of J. T. Moore's 100 acres, Juan Ximenes Sur. ..... Building derrick (rotary).
Bateman et al's No. 1 Lois Della Crim, 3,088 ft. W along N line of survey of NE cor. and 400 ft. S at right angles to N line of survey, E. G. Serien Sur. ..... Derrick (rotary).

SMITH COUNTY

Owens & Sloan Oil Co.'s No. 1 Stearns, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Shut down 3,902 ft.

Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Coring 1,570 ft.
Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Drlg. 1,545 ft.
Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,509 ft.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.
D. H. Byrd's No. 1 W. H. Mawes, 150 ft. from S and 150 ft. from W. J. Piles Sur. ..... Drlg. 3,675 ft.
E. L. Chapman's No. 1 Charles Wolverton, 215 ft. from N, 60 ft. S of NE cor. of Wolverton 10-ac. tract, William James Sur. ..... Top Woodbine 3,963 ft.; show oil 3,985 ft.; shut down 4,150 ft.
Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 14 ft.
T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Shut down 2,275 ft.; rig moved off.
Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... T. D. 3,071 ft.; will abandon.
Hartt Oil Co.'s No. 1 Dr. L. M. Cox and A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line .... Drlg. 200 ft.
Humble Oil & Ref. Co.'s No. 1 A. J. Fowler, 150 ft. from S and E of farm, John Walling Sur. ..... Location
Humble Oil & Ref. Co.'s No. 5 R. S. Blake, 150 ft. from N and 150 ft. from E of SW cor. of Mrs. E. E. Carroll farm, John Walling Sur. ..... Location
Humble Oil & Ref. Co.'s No. 6 R. S. Blake, 150 ft. from N and 150 ft. from W of SW cor. of Mrs. E. E. Carroll farm, elevation 485 ft.; John Walling Sur. ..... Location
Humble Oil & Ref. Co.'s No. 3 Carroll, 150 ft. from S and W of farm, William Daniel Sur., elevation 486 ft. ..... Drlg. 966 ft.
Pure Oil Co.'s No. 1 R. D. Clark 42 acres, 200 ft. S of N line and 150 ft. E of W line, A. H. Wiley Sur. .... Cement setting 314 ft.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 1,700 ft.
B. P. Tervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Shut down 4,601 ft.
Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. .. Temp. abd. 2,987 ft.
Imperator Oil Co.'s No. 1 G. J. Luther, in SW cor. G. J. Luther 32-ac. tract ..... Shut down 3,016 ft.; to test.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Swab 12½ hrs., 2½-in. tubing; small show oil; shut down 3,031 ft.; preparing to pump.

Kraft & Kelsey's No. 1 Enas in Vacancy strip on E side of Sam Allen and Wylie Enas farms in J. Prado Sur. .. Drlg. 2,558 ft.
Priest et al's No. 1 Blewitt, 175 ft. NW and SW of SE cor. of NW 84-ac. tract, E. Porter Sur. ..... Shut down 3,212 ft.
Pure Oil Co.'s No. 1 I. W. Thompson, 1,820 ft. SW of SW line of Nacogdoches County School Land Sur. and 225 ft. from SE line of lease in Mund Gross Sur. ..... Location (rotary).
Pure Oil Co.'s No. 1 Sam Allen, 835 ft. E of W line and midway between N and S line of lease, J. Prado Sur. ..... Location (rotary).
Pure Oil Co.'s No. 1 R. E. Cade, 225 ft. S of N line and 623 ft. E of W line of lease in A. McPhail Sur. ..... Location (rotary).
Pure Oil Co.'s No. 1 A. J. Tunnell, 250 ft. S of N line and 200 ft. W of E line of lease in Mund Gross Sur. ..... Location (rotary).
Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.
Pure Oil Co.'s No. 1 D. C. Mayo, 225 ft. E of W line and 200 ft. S of N line of 295 acres, J. Prado Sur. .. Waiting on cement to set 2,785 ft.
Pure Oil Co.'s No. 1 Mertie Elliott 101-ac. tract, 217 ft. E of W line and 672 ft. S of N line of lease, A. H. Wiley Sur. ..... Drlg. 2,580 ft.
Pure Oil Co.'s No. 2 Mrs. M. F. Shirley 38-ac. tract, 163 ft. E of W line and 93 ft. N of S line of Mrs. M. F. Shirley 38-ac. tract, John Walling Sur. ..... Reaming 2,607 ft.
Shell Pet. Corp.'s No. 2 Taylor, 150 ft. from N and 139 ft. from E of 30-ac. farm ..... Coring 2,910 ft.; top first chalk 1,474-1,618 ft.; top second chalk 2,346 ft.

(Continued on Next Page)

Shell Pet. Corp.'s No. 3 Taylor, 150 ft. from S and 65 ft. W of 30-ac. farm ..... Coring 2,784 ft.; top first chalk 1,540-90 ft.; top second chalk 2,350-2,528 ft.

Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur. . Derrick.

The Texas Company's No. 2 R. A. Tunnell 100 acres, 250 ft. S of N line and 200 ft. W of E line, John Walling Sur. ..... Location

Maud Powell's No. 1 Killam, 1,360 ft. from NW. along SW line from most S cor. of 52-ac. tract and 425 ft. NE to SW line, Jessie Russell Sur. ..... Spudded.

WOOD COUNTY

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 100-ac. tract in Wm. Barnhill Sur. ..... Shut down 4,862 ft.

Looke & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

FORESEE NATION WIDE DISTRIBUTION OF GAS

(Continued from Page 62)

this fuel, and such stimulation of interest in the elimination of waste may eventually have nation-wide effects.

Conservation

A realization of these facts, and the appreciation of the increasing public interest in natural gas, led your association to express itself definitely on the subject of conservation. A resolution adopted at the natural gas convention at New Orleans in May of this year recommended that natural gas conservation be made the subject of intensive survey, and suggested that the United States Bureau of Mines be requested to assist in the study. Pursuant to this resolution, a series of conferences was held between representatives of the two organizations, and the bureau undertook to review the literature dealing with elimination of waste in production, distribution and utilization of natural gas in order that your committee might have information enabling it to present a plan for further study to you at this October meeting.

By its Organic Act, and through subsequent legislation, the Bureau of Mines has been designated by the Congress to conduct scientific and technologic investigations with a view to conserving mineral resources through the prevention of waste, and to inquire into the economic conditions affecting the mineral industries. You should bear in mind the fact that the Bureau of Mines has no mandatory powers. It has no duty of enforcement. Our only purpose is to be helpful. In us you see an organization created and conducted with the sole aim of assisting the public and the mineral industries of this country in solving such technical and economic problems as may confront them. It is a governmental organization equipped to study problems of mineral resource conservation from a point of view which insures consideration of the interrelationships of the fuel-producing and fuel-consuming industries. The Bureau of Mines neither establishes nor enforces any rules or regulations. It is thus an organization available to assist such an association as your own. We are pleased that you have recognized the value and need of more rigid and efficient conservation of natural resources. If you wish it, we will assist you in discovering and making available the facts regarding waste of gas, and in furthering the conservation of this important national resource.

It is easier to indicate waste than to eliminate it. You know there is waste in the production and consumption of natural gas, and that there may be avoidable waste in its production, distribution and usage. The extent and character of present waste should be ascertained, and some comparisons should then be made with previous conditions. It is well known that your industry has not failed to consider this problem in the past, and it is a matter of common knowledge that the producers and distributors of natural gas have already made much progress in solving their individual problems. The present need, and I understand this is the opinion of your committee, is to find out what can be done by the industry as a whole in securing the maximum of usefulness from the natural gas produced in the United States.

Relation to Oil Production

The production and utilization of natural gas is so closely associated with the economic well being of other major mineral industries, that the problem of natural gas conservation cannot well be dealt with solely within the limits of this single industry. Before considering natural gas as a fuel, it must be thought of as a physical agent responsible to an important degree for moving crude petroleum to the surface. In this it performs a valuable service. Between 60 and 70 per cent of the natural gas actually utilized is produced in conjunction with the output of crude petroleum, and the need for oil is thus an important factor in determining the quantity of gas brought to the surface. One of the main factors in determining the production rate of natural gas is therefore under the control of the oil industry, which is associated with, but somewhat apart from, the natural gas industry. The waste which occurs between the production of natural gas and its utilization results in part from this fact that one industry largely determines the rate and the amount of production, while another industry has the job of seeing to it that the produced gas is properly utilized.

Because of the natural gasoline contained within it, there may be a demand for natural gas, entirely apart from its use as a propulsive agent in the production of crude petroleum, and aside from its fuel utility. Natural gasoline plants in various oil fields have assisted conservation by the collection of gas from scattered wells, and by making considerable volumes of residual gas available at central points. The carbon black industry is interested in natural gas, and each one of us is personally interested in greater mileage from our automobile tires resulting from the use of carbon black in tire manufacture. Fuel consumers are bound to be interested in this natural energy source, both as to the supply and in regard to future uses. The wide development of small power units within the reach of gas-distributing systems will add to our millions of internal combustion engines. It goes without saying that the producers of other industrial and domestic fuels, whether they be solid, liquid or gaseous, should not be disregarded in any consideration of the conservation or utilization of natural gas.

Although we may be struck with the extent of recent accomplishment, we should still consider that the natural gas industry is in its youth; your association has expressed the desire that its future may benefit from all that may be learned from the past. An industry built upon sound investigation and interpretation of fact should surely prosper.

YATES OUTSTANDING PRORATION EXAMPLE

(Continued from Page 64)

tubed to date indicate that this policy has increased the gas efficiency of production, caused small wells to flow steadily through tubing, and minimized the hazards of water encroachment. A report which was presented at the American Petroleum Institute meeting September 4 and 5, 1930, at Galveston, by members of the engineering committee, stated "that in 55 representative wells tubing is saving 4,028,000 feet of gas per day. This is a gas saving of approximately 33 per cent by volume, while the oil production was increasing 1,057 bbls. per day."

Bottom Hole Beans

Some experiments with bottom hole beans have shown beneficial results in increasing the efficiency of oil flow. The tests have not been carried very far because of the difficulty in obtaining the proper sized opening to secure the prorated amount of production.

A gasoline plant was put into operation in December, 1929, capable of handling 20,000,000 feet of gas per day. The average gasoline content of the gas is approximately 1 gallon to 1,000 feet. An investigation was carried on to determine the most advantageous trap pressure to carry in order to obtain the largest gasoline content from the gas. It was found that by reducing the pressure of the traps from 50 pounds to atmosphere, that the gasoline content of the gas was increased from 0.62 to 1.90 gallons per 1,000 feet. Most operators are taking steps to elevate traps so that the pressure can be reduced to a minimum in order to obtain the greatest possible revenue from the gas produced.

The data being gathered by the several company engineers are assembled and correlated in the umpire's office by an engineer on the staff of the umpire who acts as chairman of the permanent engineering committee. The engineering committee enjoys the whole-hearted co-operation of the field men of all companies.

The Yates Pool is the outstanding example of the benefits derived from the orderly development and operation of a field under effective proration. This is indicated by the fact that it has produced 96,500,000 bbls. in a period of three years with little apparent decline in indicated potential production. This is almost a third as much as the total production from all of the other West Texas fields, some of which had high potentials and are now nearing a point of exhaustion because they were produced without effective co-operative control. The plan has lengthened the profitable life of this field and has resulted in the substitution of underground storage for tankage.

The perfection of this plan was the result of a year of earnest effort on the part of the operators to arrive at a formula that would express the relative productive value of the different leases and would apportion their outlet in conformity with these values. It has fostered a desire for practical conservation and a fine spirit of co-operation among the operators, which is being carried by them into other fields that are now being prorated.

DIFFICULTIES IN TEXAS PRORATION IS EXPLAINED

(Continued from Page 64)

that nominations are received from buyers and that runs are correctly prorated.

The Yates plan is the most satisfactory, certainly the most successful, of any that has yet been tried. Under this plan the producing area, as development progresses, is divided into 100-acre units and 25 per cent of the pipe line outlet prorated among these units. The remaining 75 per cent of the pipe line outlet is prorarted on a basis of average potential production per unit. This plan serves to keep drilling to a minimum, gives small wells a chance to pay out and has sufficient flexibility to be applied to almost any newly developed field and to be adapted to local conditions.

The greatest difficulties in prorating will occur in the old producing districts, such as North Texas (Wichita Falls) and West Central Texas (Ranger) and in partially developed areas, such as the Panhandle. In these districts the pipe lines have reduced their runs by different percentages, effecting an unequal proration, varying from instances where some properties have no connections, while other properties run all of their production. There should be an arrangement to exchange oil between pipe line companies. As nominations and potentials change, the runs of a pipe line company may fluctuate above and below the nominated amount. To balance runs by shifting connections is expensive. The ideal plan would be to have a central gathering agency which would deliver oil to the pipe lines.

The most simple means of prorating districts of this type is on a basis of pipe line outlet to total potential production with an exemption for all leases of an amount of oil per well equivalent to the marginal well limit arbitrarily determined for the district. The marginal well exemption may be considered discriminatory from an economic standpoint, but it must be remembered that conservation is the only legal ground upon which proration can proceed.

It is not to be expected that under present laws proration will be successfully applied to every producing property in an area in which restrictions are desired by only a majority of the operators. However, the work slowly progresses with occasional setbacks, due principally to some producers finding a market, generally at reduced prices, and insisting on producing all of their oil, even if their neighbors lose a fair share of the ultimate production.

Necessity for Laws

The necessity of having laws that are enforceable, and that have penalties of sufficient magnitude to make violations unprofitable, has been emphasized during the past few months. The enormous waste of gas in the Panhandle and in West Texas calls for a law limiting production on a gas oil ratio basis.

Such laws would automatically prorate new fields and in a measure would prevent the excessive production of gas, which is either wasted or sold cheaply in direct competition with fuel oil.

Since the joint committee began functioning in June, proration has been inaugurated in the Panhandle, in North Texas, in West Central Texas, in Crane, Upton and Ector Counties in West Texas, in the Van Pool in East Central Texas, in the Chapman Pool and Salt Flat Pool in Southwest Texas and in the Pettus Field in Bee County. Production has gradually decreased from 863,000 bbls. to 772,250 bbls. per day.

NEW LINES TO VAN POOL MAY FOLLOW HUMBLE

(Continued from Page 62)

farm and pump station site of the Humble Pipe Line Co., but as it has several leases on the northeastern, and one large lease on the east side of the field, already condemned to production by a dry hole, no doubt one of these leases will be chosen as the Van Field terminus of the line.

The Pure Oil Co.'s pumping station is located on the west side of the field on an economical site, for much of the oil can be run to the tank farm through gravity lines, thereby saving expense of pumping throughout the gathering system. The Humble Pipe Line Co.'s station site may be chosen accordingly, and in case it is, the north or northeastern side of the field would be eliminated as a choice location for it is considerably higher than the southern and western, as is also the eastern side of the field.

Field Is Prorated

The Van Field came under the general proration of Texas, which went into effect August 15, 1930, the field being given a daily allowance of 27,500 bbls. per day. With two lines serving the field it looks as if the allowance would have to be stepped up to accommodate desired purchases of the new company, or that proration be disregarded in the field, although the Pure Oil Co. has been running more than its refineries require. When the new line is completed the Pure Oil Co. may ask for relief and a cut in its runs November 1, 1930, when contract between it and the other unit members expires. This contract called for the Pure Oil Co. to take 25,000 bbls. per day from unit wells, and if it cuts its runs the Humble Pipe Line Co. may elect to take the difference.

The Oklahoma Contracting Co., and the Hughes Construction Co. of Houston, have contracts for the Humble line.

KANSAS SCOUTS ELECT OFFICERS

The Kansas Oil Scouts Association has elected H. M. Johnson, Twin State Oil Co., president, and Ed Hogan, Prairie Oil & Gas Co., secretary, for the coming year. The headquarters have been moved from Wichita to Larned, in western Kansas.

Lucas County, Ohio, Gets New Well

Central West Holding Its Own in New Work, Mostly of Wildcat Nature. Indiana Plans Drilling Campaign

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 20.—The Central West Field is holding its own in new development work, much of it on the wildcat order. The bulk of the test work is in the Central Ohio Field. The old Lima division is keeping up its work as well as at any time during the past several years, especially in Seneca and Hardin Counties. A test was drilled on the D. C. Teft farm by Dillon & Weed during August in Section 32, Monclova Township, Lucas County, which produced an initial of 50 bbls. from the Trenton formation, and brought about additional work in that area just west of Toledo. The same lease, which is now owned by Dillon & McFrederick, has developed another well but its initial was only 5 bbls. at 1,372 feet, but is sufficient to encourage more work. Same company has drilled No. 1 on the France Stone Co.'s land in Section 28, same township, also with an initial of 5 bbls., and No. 1 on the H. Butz farm, Section 23, same township, which produced but 2 bbls. initial at 1,365 feet. The well on the France Stone Co. land found its pay at 1,395 feet. This area shows with wells in three sections that the field or pool may be of greater extent. Much leasing has been done in Monclova Township in advance of the four completions already made. Some 35 years ago a narrow oil belt was developed near the town of Monclova, but proved a narrow streak, running northeast of the Waterville Field.

The Martin Oil & Gas Co., or Lynch and others' test on the Newton Martin farm, Section 7, Pleasants Township, Hardin County, produced a volume of 320,000 feet of gas from the Trenton at 1,300 feet. In Cessna Township, same county, Bryan and others found a dry hole on the H. and R. Ziegler farm, Section 34, at 1,435 feet. In Pleasants Township, same county, the Wiser Oil Co. made a location on the Clarence E. Ruhlen farm, Section 18. Bert Sheldon is drilling No. 1 Fred Kurt farm, Section 6. Penn Oil & Gas Co. made a location on the L. A. C. Whitmore farm, Section 5, and the Pleasant Oil & Gas Co. is drilling a second test on the Minnie Burnison farm, Section 6, same township. Barnaby and others are also starting a test on the Jacob Kurt, Section 7, Blanchard Township, also a second test, same farm.

C. A. and F. J. Peavey report a dry hole on the N. A. Bash farm, Section 25, Delaware Township, Hancock County, at 1,350 feet.

CENTRAL OHIO

Twenty-two completions were reported from the Central Ohio Field, of which 5 were oil wells with an initial production of 295 bbls., 11 dry holes and 6 gas wells. In new work under way there were 7 new locations staked and 19 wells started, a total of 26. This is distributed among a number of counties.

In Ashland County there was but one completion, Robinson and others' No. 2 on the Phillip Doerr, Section 16, Lake Township, which was dry from 700 to 740 feet. Same parties are drilling No. 4 C. I. Sellers, Section 9, same township.

In Medina County, Barnhart and others are drilling No. 3 Joseph Funk, Section 6, Harrisville Township.

In Lorain County, J. W. Cushing has a gas well on the Catherine Kolb farm, Lot 14, Carlisle Township, at 2,358 feet. Wiser Oil Co. is drilling No. 1 John A. Smith, Lot 5, same township. Same company is drilling No. 1 Nilo Stenden, Lot 38, Ridgeville Township.

In Wayne County, Chester Township, Faulkner and others have a light gas well in No. 4 E. L. Donaldson, Section 25, from 663 to 666 feet. Harmon & George are starting a second test on the Lewis Howman farm, Section 32, Congress Township.

In Holmes County, Hardy Township, East Ohio Gas Co.'s No. 4 Harrett McCullough farm, Lot 30, is reported with an initial of 90 bbls. from 3,350-80 feet.

In Ashtabula County, Conneaut Township, Schaeffer Brothers are drilling on the E. A. Titus farm, Lot 60.

In Knox County, Union Township, Ohio Fuel Gas Co.'s No. 1-5,320 Louise E. Rogers, Lots 4-23, is reported dry from two sands at 775-82 feet and from 806-88 feet. Reno Oil & Gas Co. made a location for No. 2 S. S. Day, Section 11, Jefferson Township.

Coshocton County

In Coshocton County, Perry Township, the Preston Oil Co.'s No. 1-1,436 F. A. Donacher farm, Section 16, produced an initial of 190 bbls. from 3,131-77 feet. Bell Brothers are drilling on the G. and E. Stockum, Lot 9, Tuscarawas Township, Ohio Fuel Gas Co.'s No. 1-5,273 Howard B. Ashcraft farm, Section 6, Pike Township, is reported dry from 2,953-98 feet.

In Summitt County, Franklin Township, Wilcox & Kime struck a fair gas well on the F. McKnight farm, Section 35, from 3,999 to 4,036 feet. East Ohio Gas Co. has decided not to drill No. 1 Henry Steese, Section 21, Greene Township, same county.

In Licking County, Fallsburg Township, McClay Brothers have a dry hole in No. 3 on the U. G. Porter farm, Section 13, from 2,998 to 3,058 feet. Ohio Fuel Gas Co. got one of the same kind in No. 1-5,183 Margaret Robinson farm, Section 19, Hopewell Township, from 2,953-98 feet. Same company has a light gas well in No. 1-5,275 Guy Watkins farm, Section 4, Newark Township, at 1,250 feet.

In Muskingum County, Harrison Township, H. G. Farmer and others have a dry hole on the Salena N. Stanbery farm, Section 20, in the Clinton lime at 4,094 feet. Donahoe and others' second test on the A. P. and J. W. Rush farm, Section 17, same township, pumped 3 bbls. initial from the Berea sand at 1,108 feet. Wehrle Co.'s No. 1 Azariah A. Davis, Section 11, Salem Township, was drilled to the Medina formation at a total depth of 4,470 feet and was dry. The Pure Oil Co. made a location for No. 5 Lloyd McKee farm, Section 6, Jackson Township. The Atha Co. is drilling on the Betts-Inhoff farm, in the fourth quarter section of Washington Township. Same company is drilling No. 1 L. M. Bryan farm, Section 22, Perry Township, same county. In Brush Creek Township, the Ohio Fuel Gas Co. has a light gas well in No. 1-5,267 Lawrence B. Pake farm, Section 23.

In Athens County, Ames Township, Moser and others have a 2-bbl. pumper in No. 3 on the Robert Bean farm, Section 13, in the Cow Run sand from 295 to 299 feet. Carpenter & Glazier drilled a dry hole in No. 12 H. D. and C. C. Curtiss farm, fractional Section 33, Berne Township, in the Wolf Creek sand at 83 feet and are drilling No. 13, same lease. Clark Oil & Gas Co. is drilling on the J. S. Radford farm, Section 25, Athens Township. Orange Gas Co. drilled a dry hole in No. 3 on the H. L. Chapman farm, Section 19, Carthage Township, in the Maxon sand at 1,143 feet. Porter Brothers' No. 2 on the Hocking-Athens Coal Co. land, Section 25, York Township, pumped 10 bbls. from 3,205-35 feet. Nuzum and others have a gas well in No. 3 on the Elmer Halbert farm, fractional Section 3, Cannan Township, at 1,492 feet.

In Tuscarawas County, Washington Township, Hopewell Oil & Gas Co.'s No. 2 Stewart Asher farm, Section 19, was dry at 3,692 feet.

In Fairfield County, Richland Township, Patton & Bishop drilled a dry hole on the Owen Stewart farm, Section 29, at 670 feet. Gas Producing Co. of Ohio is drilling on the J. and S. Holliday farm, Section 14, Walnut Township, and the Wiser Oil Co. is drilling No. 1 Lemuel Hite farm, Section 24, Pleasants Township.

In Belmont County, Somerset Township, W. C. McBride, Inc., is drilling No. 4 on the Howell-Dement, Section 1.

In Medina County, Chatham Township, E. R. Edson Son Co.'s No. 27 Daniel Ross farm was dry at 418 feet. Oko Oil & Gas Co.'s No. 33 Jess Vickers, Section 2, pumped an initial of 25 bbls. at 465 feet, which is the Cow Run sand, and No. 34, same farm, pumped 5 bbls. at 447 feet. Same company's No. 43 Henry Essig farm, Section 13, pumped 30 bbls. initial at 375 feet.

INDIANA

Indiana is attracting some attention and the wildcatters are looking over numerous parts of the State for test work and many leases are being taken. Quite a few completions have been made recently, which indicates an active drilling campaign with the opening of the spring season.

Close to the old Trenton Rock Field in the northeastern part of the State, the Roanoka Oil & Gas Co. drilled a test near the town of Roanoka, in Huntington County, farm name not known, which was a duster. South from Huntington the Twin Rivers Oil Corp. is drilling No. 3 on the Jacob Buzzard farm, where this concern brought in a commercial gas well during September.

In the Princeton Field, Columbia Township, Gibson County, the Indiana Southwestern Gas Corp. struck a gas flow estimated at 1,000,000 feet on the L. W. Gudgell farm, Section 25, at a depth of 3,500 feet and is now underreaming to get the well in good shape. This well has been listed as the Texana Oil Co.'s heretofore. Same company is drilling on the Lawrence Riley, Section 16, Barton Township, same county, near the town of Sommerville.

Pike County in the southwestern por-

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HART COUNTY, KENTUCKY, PRODUCER STARTS ACTIVITY NEAR HORSE CAVE

By George A. Whitney

OWENSBORO, Ky., Oct. 20.—Few completions are reported from any part of Kentucky, the real excitement being centered near the hamlet of Seymour, 6 miles east of Horse Cave, in southeastern Hart County, where the big well was brought in recently on the Lewis McKinney farm, which is reported doing three 100-bbl. tanks of oil a day with top only one-third open. This well is owned by Winn Davis and Harry Norris. No. 2, same farm, struck 3,000,000 feet of gas above the shale which handicaps drilling. This No. 2 is 2,000 feet west of No. 1 Stanley Warder, and H. F. Norris got a dry hole on the Abe Garvin farm, in both sands. However, the duster is 1¾ miles to the northeast of the big oil well. Stoll Oil Refining Co. is now running the oil, there being 30 full 100-bbl. tanks. Norris and Davis brought in their No. 1 on the Nannie McKinney farm, adjoining the Lewis McKinney farm, and estimated from 250 to 500 bbls. initial. This area is full of leasers, and much work will be done owing to the shallowness of the gas and oil production. The next 30 days will about determine the size of the new Seymour or Horse Cave Field.

Ohio County

The only commercial producer reported from Ohio County was H. L. Ogle and others' No. 28 on the Pate Royal farm, in the Friendship Church Pool, which has proved very productive there, pay sands being found, all showing production.

D. J. White and others' test in the northeast corner of the Herbert Coy farm, in the Haynesville area, was dry. James C. Ellis and others' No. 3 on the J. W. Mosley farm, 2 miles southeast of Whitesville, was a dry hole in the Barlow sand at 712 feet. Cumberland Petroleum Co.'s No. 4 Alfred Brown farm, is a dry hole in the Jett sand. H. M. Hunt drilled a dry hole on the Connor heirs, 2 miles northeast of Whitesville, in the Jett sand at 520 feet.

Daviess County

One producer and four dry holes are the record for Daviess County, the producer being Hupp, Duff and others' No. 3 Alla Atherton farm, in the Maxwell Field, an offset to No. 7 on the Hayden farm, and it produced an initial of 75 bbls.

McMahan and others' No. 1 J. S. Simmons farm, Maxwell Pool, was dry. Jess Watts and others' No. 1 Cruze farm, in the Masonville area, near Habit, is also dry. Vickers and others' No. 1 Rachael Shultz farm, east of the Burton Pool, was dry and the Creek Drilling Co.'s No. 1 John Mills farm, was a duster.

Hancock County

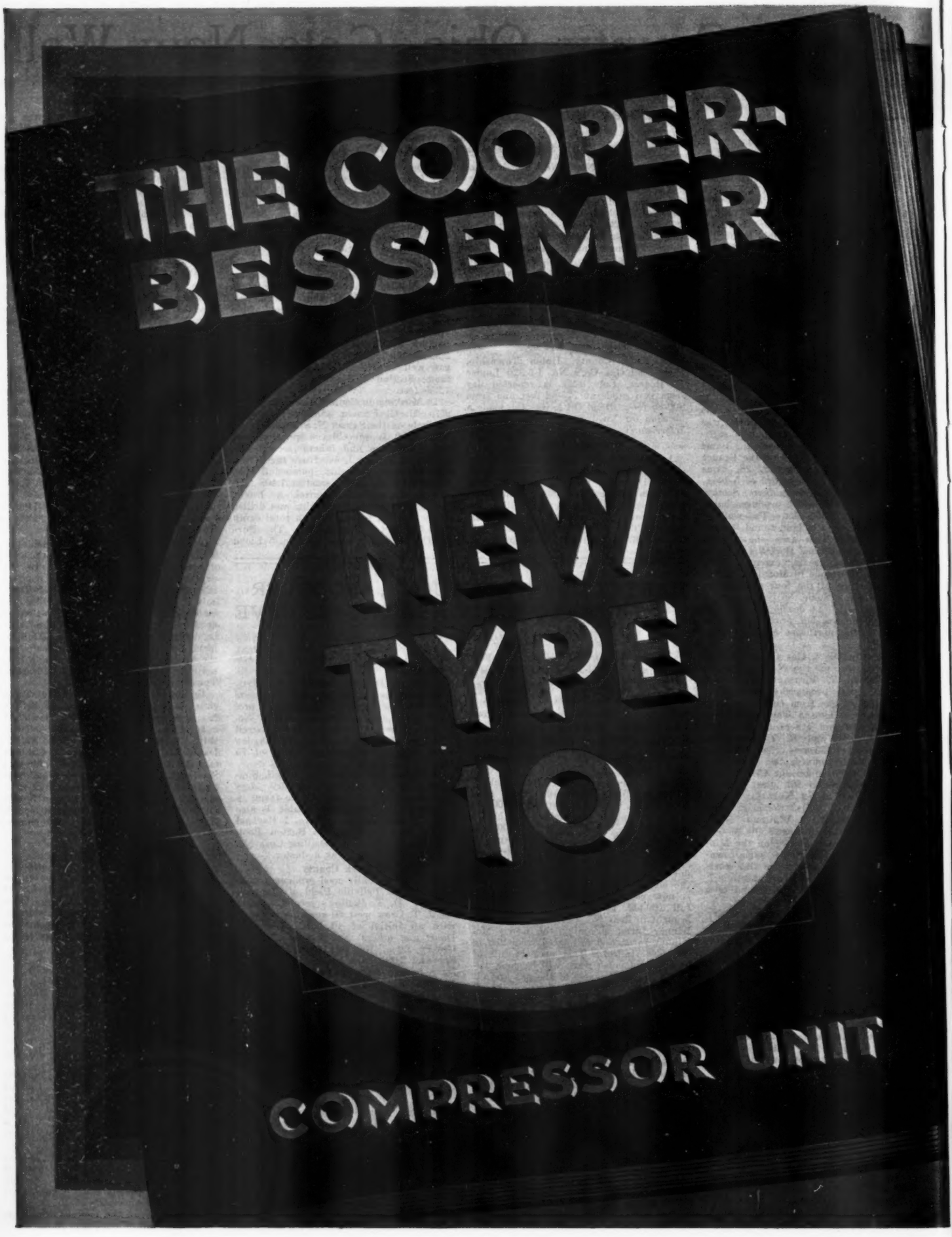
Two exceptionally good producers were found in the Pellville Field of Hancock County. D. T. Bolling's second test on the J. T. Crow west 60 acres, is reported with an initial of 40 bbls. Lowman, Daley and others' No. 6 James B. McGovern farm, 150 feet from the north line and 2,000 from the east line of the lease, is also reported with an initial of 40 bbls.

McLean County

Mel Root and others' test on the Central State Bank property, in the Calhoun Field of McLean County, produced 50 bbls. initial at 1,630 feet. The Pet Oil Co.'s No. 1 A. H. Wilson farm, same field, developed into a dry hole where a good well was expected.

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during September were: 267,672.26 bbls. Runs of the Cumberland Pipe Line Co., for September, from the eastern Kentucky fields, totaled 179,527.92 bbls.

It is rumored that the Peoples State Gas Co., a subsidiary of the Petroleum Exploration Co., will utilize the old Cumberland Pipe Line, which has run oil for many years from the southeastern Kentucky field to West Virginia.


THE COOPER-
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10
COMPRESSOR UNIT

THIS BULLETIN GIVES THE FACTS ON THE NEW TYPE-10 COMPRESSOR UNIT

HERE, in a handy Bulletin, is assembled up-to-the minute information on this field-developed 100 B. H. P. single and 200 B. H. P., 2-cycle gas engine driven compressor unit. Realizing that the success of any compressor unit depends largely upon its compressor cylinder, Cooper-Bessemer engineers developed an improved line of compressor cylinders for the New Type-10. The Bulletin pictures and tells about the new 20-inch stroke improved type compressor cylinder. Illustrations of important installations and of the new engineering features make this bulletin both interesting and valuable. Write for a copy today.

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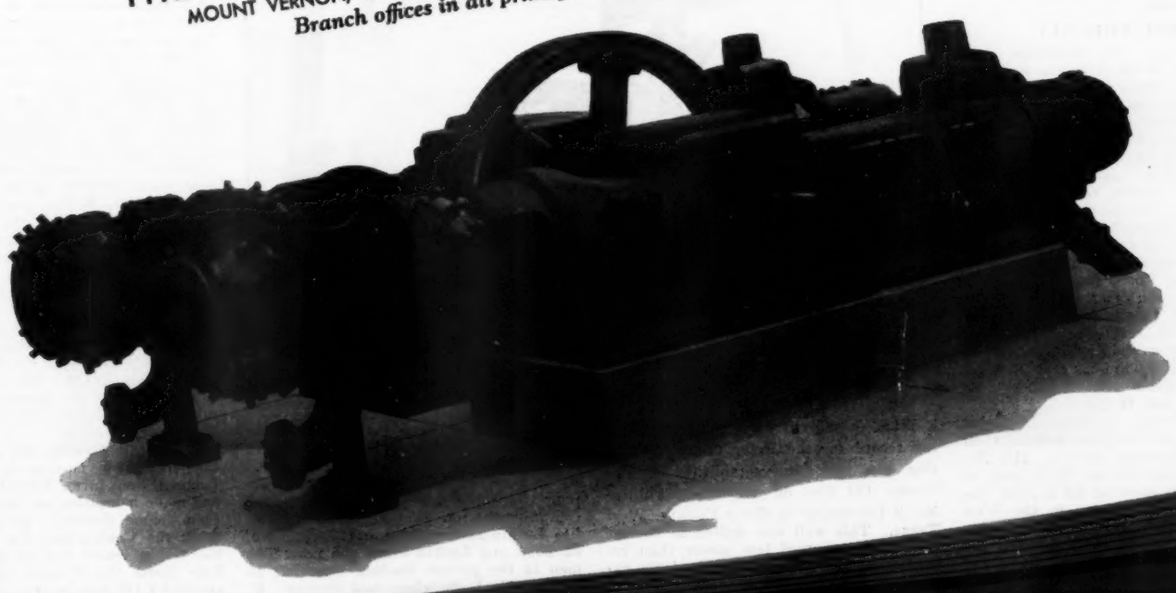


Overproduction Affects Operations

Operators in Eastern Fields Influenced by Low Prices. Good Oil Producer Completed in Southeastern Ohio

By Staff Correspondent

PITTSBURGH, Pa., Oct. 20.—Since the overproduction of Pennsylvania Grade crude oil became apparent, and its low market price and subsequent curtailment in production, there has been a decreasing number of new oil producers completed and a corresponding fewer number of wells drilling on proven oil leases. Drilling programs, in such areas, have virtually been abandoned by the larger companies. Most of the new production has come from test wells on new leases.

The past week proved uneventful with but 7 completions in southeast Ohio, 5 of which were dry, 17 in West Virginia, and 3 in southwest Pennsylvania. Among these were two fair oil wells and one good gasser. Muskingum County was the only section in southeast Ohio from which producers were reported. In the SE, Section 7, Hopewell Township, the Preston Oil Co. completed a fair producer on the E. E. Varner farm. It was drilled in the Clinton sand at 3,284 feet and produced 145 bbls. the first day after shot. In the SW, Section 11, Perry Township, the Wittmer Oil & Gas Properties drilled No. 1 on the Carl Riley farm in the Niagara lime at 3,155 feet and it is estimated will make an 8-bbl. pumper.

In Athens County, the Orange Oil & Gas Co. completed a test on the S. R. Coen farm, near Guysville, Section 19, Carthage Township, to a depth of 1,164 feet and through the Injun sand and it was dry. In Hocking County, the Preston Oil Co. had a similar result in No. 1,421 on the Sunday Creek Coal Co. tract, Section 17, Ward Township, which was drilled in the Clinton sand, 3,633 feet. The structure was badly broken with no showing of oil or gas.

In the NE, Section 28, Island Creek Township, Jefferson County, Elliott & Co. drilled a wildcat on the Swartz farm in the Berea sand at a depth of 1,250 feet, dry in all formations. The Preston Oil Co. completed No. 3 on the J. W. Johnson farm, Section 8, Bethel Township, Monroe County, in the Berea grit at 2,000 feet and it was also a duster. In Muskingum County, M. F. Whitehill completed a test on the S. M. Stanberry and H. Meriam farm, NW, Section 20, Harrison Township. It had a total depth of 4,050 feet and was dry through the Clinton sand and in all formations.

WEST VIRGINIA

But three new oil producers were brought in in West Virginia and they were small, all tests in proven territory. The largest was on the waters of Sugar Camp Run, Reedy Creek, Reedy district, Roane County, where the Heck Oil Co. completed a test on the C. O. Smith farm. estimated good for five bbls. In Clay district, Wirt County, Groves Whitecotton completed a test on the C. C. Jackson farm in the Mitchell sand good for a quarter of a barrel a day natural. In Liberty district, Marshall County, the Twin Oak Oil & Gas Co. is completing a test on the W. E. Pariott farm and testing the oil in the fourth sand, which was reached at 3,035 feet. The depth of the well is 3,046 feet and there is about 70 feet of oil in the 6⅝-inch casing, which is the accumulation of a week.

Gas Wells

In Boone County, Godfrey L. Cabot completed two wells on the Federal Coal Co. tract in Sherman district. His No. 41 was completed in the Weir sand at 3,011 feet and is showing for a small gas well, and his No. 42 also in the Weir sand is somewhat better, testing over 500,000 feet. In the same district, the Pure Oil Co. completed its No. 48 on the Federal Coal Co. tract in the Berea sand at 3,041 feet and it will make a good gasser.

Calhoun County was active with four completions. In Center district, W. H. Bickel drilled No. 3 on the J. C. and J. H. Hayhurst farm in the Injun sand at 2,049 feet and it is a light gas well natural. In the same district, F. F. McIntosh completed a test on the Hannah Jarvis farm in the Injun sand at 2,218 feet and it is a very light gasser. In Sherman district, C. B. Lewis and others drilled No. 2 on the L. J. Morris farm in the Injun sand and it will make a small gas well at 2,156 feet. M. F. Crawley completed a test on the W. H. McDonald farm in Sheridan district, also in the Injun sand at 1,999 feet and it is a fair gas well.

In Fayette County, Godfrey L. Cabot is cleaning out No. 5 on the Kanawha and Hockins Coal & Coke Co. tract in Falls district, which at present is showing for a light gasser at 2,436 feet. The United Fuel Gas Co. completed a fair gas well in its No. 4,067 on the Black Band Coal & Coke Co.'s property in Louden district, Kanawha County. It was completed at a depth of 4,600 feet. In Marion County, Victor Tennant completed his test on the E. P. Amos farm at 2,880 feet and in the Fifth sand. The Fifth sand was dry, and the well was then plugged back to the Injun sand from which formation it will make about 200,000 feet of gas a day.

About 2½ miles north of Pennsboro, Bachelor, Choguill, and Ray completed a test on the George C. Boyce farm, Clay district, Ritchie County, in the Big Injun sand at 2,125 feet and it will make a gas well. In Murphy district, the same county, Rexroad and Robinson had a duster on the M. C. Cumberledge farm which was drilled through the Injun sand at a depth of 2,031 feet. The best gasser was completed by W. H. Heeter and others on the Robert Knopp farm, Curtis district, Roane County. It was drilled in the Salt sand at 1,761 feet and is showing for a 1,500,000 feet a day natural. The Hundred Oil & Gas Co. completed its No. 2 on the McDonald Heirs farm in Church district, Wetzel County, at 3,324 feet and it is a gasser.

Drilling in West Virginia

There is considerable drilling going on in the proven districts in Boone and Kanawha Counties. Godfrey L. Cabot has about reached the sand in his No. 7 on the E. M. Arbogast farm in Crook district, and has a rig standing for his No. 8 on the same lease. In the same district, the same operator has reached 2,354 feet in his No. 7 on the Y & O Coal Co. tract. In Peytonia district, the Owens Bottle Co. has a rig standing on the Broun-Cochran property, and in Scott district, is rigged up and ready to start a second test on the S. M. Wheeler farm, and the rig and tools ready for No. 21 on the Cassingham and others lease. In Washington district, the Pond Fork Oil and Gas Co. is down to 1,980 feet in its second well on the Yawkey-Freeman Coal Co. tract. In Sherman district, the Pure Oil Co. has a fishing job at 3,134 feet in No. 39 on the Lafollette, Robson and Prichard Tract B, and on Tract A has cleared a location for No. 42. The same company has reached a depth of 1,039 feet in No. 47 Federal Coal Co. tract, Sherman district, and 1,435 feet in No. 49, and has a location cleared for No. 50. In the same district, the same company has a rig up for another well on the Williams Coal Co. lease. Godfrey L. Cabot is drilling on the Federal Coal Co. tract and has material on the ground for his No. 30, a location cleared for No. 31, building a rig for No. 32, drilling at 450 feet No. 42, has reached 2,388 feet in No. 43, 1,697 feet in No. 44, and rigging up for No. 45. These wells are mostly Weir sand gassers. G. L. Cabot has a rig standing on the John Dickinson farm, Sherman district.

In Kanawha County, the Owens Bottle Co. has a rig ready and part of the tools on hand for a well on the C. Q. Crockett farm in Malden district. In the same district, G. L. Cabot has a rig up on the William P. Tomkins farm for No. 5, and the United Fuel Gas Co. has rigged up No. 4,278 and on the Laura M. Ray farm. The Winifrede company have four wells drilling on its own property in Cabin Creek district, No. 2 is drilling at 2,941 feet, No. 3 at 1,655 feet, No. 4 at 1,080 feet and No. 5 at 1,255 feet. In the same district, the United Fuel Gas Co. have two wells drilling on the Sunday Creek Coal Co. tract and have rigged up for a third, and has a location ready on the J. M. Johnson farm.

In Harts Creek district, Lincoln County, Frank Yates is shut down at 1,810 feet for water in his test on his own property. In Ceredo district, Wayne County, the Ohio and Kentucky Gas Co. has reached 3,620 feet on the J. P. Staley farm. In Butler district, the Chartiers Oil Co. shut down at 3,312 feet for water in its second test on the Anna Streuber farm. In Greenbrier County, the Thompson Harris Co. is down to 1,940 feet on the Samuel Hinkle farm, Williamsburg district. In Mason County, the Federal Fuel Corp. is about in the sand in a test on the G. L. Thornton farm, Cologne district.

Jackson County

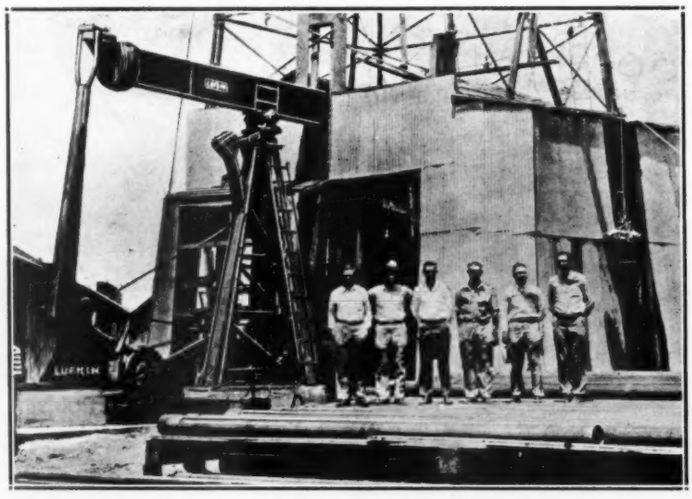
In Jackson County, the Pine Knot Oil Co. has part of the material on hand for a test on the J. T. Phillips farm in Washington district. In Ravenswood district, the Heck Oil Co. is rigging up for a second test on the William Boggess farm, and has the material on the ground for No. 3 on the B. A. Shaffer farm. In Tyler County, Berkley and Shrader are spudding in on the William Sandy farm, in McElroy district, and in Ellsworth district, the Manufacturers Light and Heat Co. has a location for No. 3,449 on the C. L. Parks farm. In Doddridge County, J. H. Pentz has spudded in and started drilling No. 3 on the Mary and Zed Underwood farm, in McClellan district, and in Grant district, W. D. Gribble has reached 2,350 feet in his No. 3 on the A. B. White farm.

In Cabell County, the Hamilton Gas Co. is down to 1,350 feet in a second test on the William Sunderland farm, Grant district, and in the same district, the Harshbarger Oil & Gas Co. has a rig standing for a second well on the J. A. and Oscar Conner farm. In Barboursville district, Wilson and Mowery have reached 1,950 feet on the F. L. Frazier farm, and is drilling on the C. & O. R. R. property. In the same district, the Hamilton Gas Co. is drilling on the F. C. Hassey farm, and is building a road for a test on the C. C. Clark farm. Ortman and Shipe have spudded in and started drilling on the Frank Bowden farm. In Guyandot district, C. C. Wolfe is down to 850 feet on the Ben Lomond Land Co. tract, and the Larner Gas Co. has taken a location on the L. A. Williams farm.

In Lincoln County, the Allegheny Gas Corporation is moving in tools on the Isaac Dillon farm, Carrol district, and has made a location on the Rufus Dillon farm, same district. In Jefferson district, the Conley Gas Co. is drilling at 850 feet a second test on the W. M. Adkins farm, the Federal Gas Corp. has reached 1,160 feet in No. 5 on the Louisa J. Tudor farm, and the Jefferson Gas Co. is down to 1,600 feet in a second test on the Richard Miller farm. In Union

(Continued on Page 105)

CABLE TOOL DRILLING RECORD ESTABLISHED BY SIMMS



What is said to be a cable-tool drilling record for the Ector County formation has just been established by the Simms Oil Co. on its Simms-Phillips No. 3 University in Ector County, West Texas. This well was drilled in shorter time and consumed less power than recorded in any previous standard rig experience with the Simms company.

The well was drilled compietely from the ground with a Lufkin No. 5½ Herringbone gear unit with the use of a Lufkin No. 52 hoist. During one operation 2,243 feet of 8¼-inch casing was set in 2 hours and 50 minutes with the Lufkin No. 52 hoist. This is also understood to be a record for setting 8¼-inch tubing.

Equipment on this rig included No. 5½ Lufkin Herringbone unit, Lufkin No. 52 hoist and Lufkin beam and post. The men in the picture reading from left to right: T. J. Saugher, tool dresser; E. D. Ruse, driller; E. T. Barnes, tool dresser; A. T. Nuttall, driller; J. D. Best, Lufkin representative, and S. P. Todd, tool pusher.

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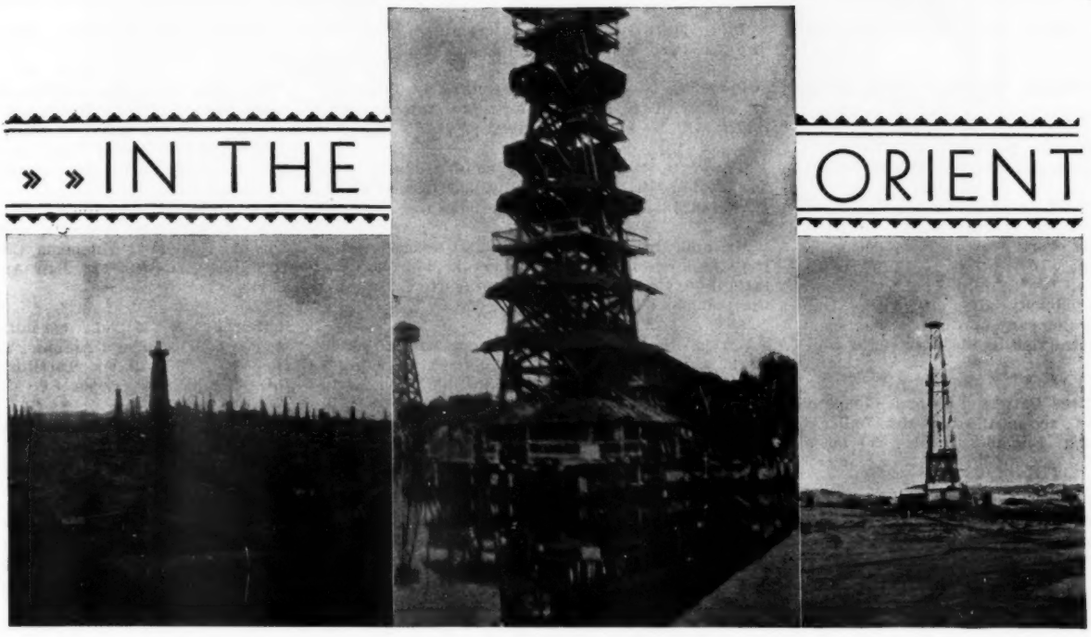

Chauk Field, Burma *Rig in Sanga-Sanga, Dilam River, Louise, Borneo* *Tana District, Iraq*

Performance makes for friendship . . . . Friendship establishes mighty assets in business . . . . This type of asset the Reed Roller Bit Company is rich in . . . . For almost weekly come reports of performance . . . . And numerous are the friendships we count across the Orient . . . . From Iraq . . . . through India . . . . to the Dutch East Indies . . . . The Reed Rock Bit performs with speed . . . . and at an economy . . . . Reed Reamers give first aid . . . . in the making and keeping of straight hole . . . . While Reed Core Bits effect a high recovery . . . . with small cost . . . . due to replaceable parts . . . . For the friendship of Reed users we are appreciative . . . . And we pledge anew . . . . our best efforts toward the further betterment of these tools . . . . and their performance.

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Personal Paragraphs About Oil Men

Barney Meyer, Chicago, Ill., was in Tulsa last week.

* * *

W. A. Smith, of Taylor, Tex., has moved to San Antonio, Tex.

* * *

H. R. McKnight, vice president, Corona Silica, Inc., Rogers, Ark., recently visited the Mid-Continent fields.

* * *

George Calvert, of the production firm of Broderick & Calvert, at Fort Worth, Tex., spent his vacation in Canada.

* * *

Paul Truesdall, publicity director for the Universal Oil Products Company of Chicago, has spent the past week in Tulsa visiting among refining company executives.

* * *

J. C. Ballagh, of the Patterson-Ballagh Company of Los Angeles, Calif., accompanied by Mrs. Ballagh, will sail for London, England, October 30 on a short business trip.

* * *

F. A. Pielsticker, vice president of the Skelly Oil Company, in charge of refining and sales, who has been confined to his home for several weeks, has returned to his office fully recovered.

* * *

Henry B. Moreno, chief field clerk of the St. Helens Petroleum Company, with offices at Montebello, Calif., announces the arrival of Barbara Jean, born at St. Vincents Hospital, Los Angeles.

* * *

H. P. George, general superintendent of natural gas production and transmission operations of the Southern California Gas Company, accompanied by Lee Holtz and F. M. Banks of the same company, has returned to Los Angeles after a visit to the East.

* * *

F. H. Wilcox, district geologist; R. E. Gile, Norvell Ballard, Knute Evjen, W. E. Clark and William Broadhurst, other members of the geological staff of the Independent Oil & Gas Company, San Angelo, Tex., and H. H. Beck, district land man of that office, were recent visitors to Tulsa.

* * *

Ira Brown, geologist, with the Mid-Kansas Oil & Gas Company, who has been making headquarters at Austin, Tex., will move to San Antonio, Tex., and W. J. Boyle who has been the San Antonio representative of the Transcontinental Oil Company at San Antonio, will do field work.

* * *

Lewis Appleton Francis and Miss Ruth Elizabeth Day, daughter of Dr. and Mrs. Charles W. Day of Tulsa, were united in marriage in Trinity Episcopal Church in Tulsa, October 4. Mr. and Mrs. Francis will reside in Tulsa where Mr. Francis is employed by the J. A. Hull Company.

* * *

L. D. Wyant, formerly with the United States Bureau of Mines, and more recently with the Smith Engineering Company, is now in New York preparing to sail for the Canary Islands. He will be in charge of placing a refinery in operation for the Spanish government at Santa Cruz.

* * *

Ralph Steinman, formerly chief scout of the Sinclair Crude Oil Purchasing Company, has been made chief scout of the Sinclair Oil & Gas Company. Mr. Steinman has been working in the Sinclair Oil & Gas Company's production office at St. Louis, Okla., in the Greater Seminole area for the past two years.

* * *

E. Boaden, engineer, with the Phoenix Oil & Transport Company, of Ploesti, Rumania, is in Tulsa and Oklahoma City, Okla., this week while on a tour of the oil fields of this country in the interests of his company. Mr. Boaden spent about six weeks in California fields before visiting Oklahoma. He will return to Rumania via England, about December 1.

E. S. Murray, with the International Oil Company in Peru, is visiting in Casper, Wyo.

* * *

Frederick A. Earls, of the Dull-Earls Texas Co. of Albany, Tex., has moved to San Antonio, Tex., which will be his headquarters.

* * *

Grover C. Potter, formerly chief geologist with the McMan Oil & Gas Company, has opened an office at 625 McBirney Building, Tulsa.

* * *

Mr. and Mrs. Grover Crosbie and daughter, who have been spending the holidays in Petrolia, Ontario, and vicinity, left recently via New York for the Colombian fields.

* * *

Herman Stabler, chief of the conservation branch of the United States Geological Survey, with headquarters in Washington, is making his annual trip to the various field offices. Mr. Stabler was in Tulsa the past week.

* * *

F. C. McClaren, formerly district supervisor of sales for the Associated Oil Company at Portland, Ore., has been transferred to the San Francisco, Calif., office where he has been promoted to be sales assistant of the Associated, a position held until recently by George F. Herrman, who has become manager of Veedol sales.

Men of the Industry

W. H. Francis

W. H. Francis, vice president and general counsel of the Magnolia Petroleum Company, was born in Denton, Texas, March 12, 1885, and after completing high school there in 1903 attended the University of Texas in Austin from 1903 to 1907, receiving an LL.B. degree from the university law school in 1907. He returned to Denton to begin his law practice in 1907 and in February, 1908, he went to Fort Worth, where the joined the legal staff of the Fort Worth and Denver City Railway Company, continuing with it until 1911.

In 1921 Mr. Francis was appointed attorney for the Lone Star Gas Company, and represented the Magnolia Petroleum Company and its subsidiaries in Tarrant County, becoming assistant to the general counsel for Magnolia in 1913. In 1918 he moved to Dallas as assistant to the general counsel. Two years later he was named a trustee and general counsel of the Magnolia Petroleum Company, and in 1925 was elected vice president and general counsel. He is a Mason and Shriner, and is active in civic affairs.

Fred A. Earls, of Albany, Tex., has moved to San Antonio, Tex.

* * *

Dr. John Perl, Los Angeles, Calif., is making an inspection of refining conditions in Oklahoma.

* * *

Mr. and Mrs. Henry Patterson and two daughters have returned to Petrolia, Ontario, from the Venezuela fields.

* * *

A. H. Richards, geologist, with the Ramsey Petroleum Company, Oklahoma City, Okla., has been spending some time at San Angelo and in West Texas.

* * *

Hewlett A. Russell, consulting geologist, has opened offices in San Antonio, Tex. He was at one time with the Indian Territory Illuminating Oil Company in West Texas.

* * *

Mrs. Katherine Ryan, for several years prominent as an operator in Southwest Texas, has transferred her office to Tyler, Tex., in order to be near the East Texas development.

* * *

W. R. K. Scott, metallurgical engineer for the Jones & Laughlin Steel Corporation, Pittsburgh, Pa., spent some time in Casper, Wyo., recently on a business mission for his company.

* * *

H. L. Keegan, assistant superintendent of the land department of the Indian Territory Illuminating Oil Company at Bartlesville, Okla., has resigned to enter the oil business at Oklahoma City, Okla.

* * *

G. O. Dunmire, district manager of the Parkersburg Rig & Reel Company, at Houston, Tex., accompanied by E. E. Baer, sales engineer, and H. C. Hall of the same company, have been touring Southwest Texas on a periodical visit to the fields.

* * *

Norval White, Pacific Coast representative of the American Petroleum Institute, has arrived in Los Angeles from San Francisco, the Pacific Coast offices of the Institute having been moved from San Francisco to 530 West Sixth Street, Los Angeles.

* * *

Wesley G. Gish, vice president of the Sinclair Oil & Gas Company, Tulsa, was a business visitor to the Sinclair offices at Fort Worth and also made a trip to East Central Texas to see the newly opened area around the C. M. Joiner No. 1 Bradford, in Rusk County.

* * *

Peter Fertig, veteran oil driller and contractor, and father of John Fertig, vice president and general manager of the Producers & Refiners Corporation, was a recent visitor to Tulsa. For many years Mr. Fertig resided at Los Angeles, Calif., but has moved to Independence, Kans., to remain with his son.

* * *

Frank N. Smith, for 37 years a valued employe of the S. R. Dresser Manufacturing Company at Bradford, Pa., has been placed on the company's pension roll. Mr. Smith has had much to do with the designing of mechanical models from which Dresser couplings have been made and while he is on the retired list will not altogether sever his connection with the firm he has so long and faithfully served.

* * *

H. R. Decker, of Houston, Tex., was a visitor in Tulsa last week. Mr. Decker came west from Pennsylvania in 1890, attracted to the Indian Territory by samples of seepage oil which had been sent to him by his brother, Stewart M. Decker, at that time in the United States Army. Not being able to close negotiations for leases with the United States Government he continued on to Texas and was in the Gulf Coast when the first well was completed on Spindletop, near Beaumont in 1901. Mr. Decker invented and was granted patents on many rotary drilling tools and devices, and has for years been known for his ability to control wild gas and oil wells.

A worthwhile performance in the Oklahoma City field

WITH

HUGHES ROCK BITS and CONES

The above photograph shows the drilling crew of the Fesemyer Drilling Company on the Indian Territory Illuminating Oil Company's Eacock No. 2 Well, Oklahoma City field.

A 6-1/8" Hughes Rock Bit is ready to go into the hole—depth 6422 feet.

Well was completed in 45 days of drilling—Hughes Rock Bits and Cones used "all the way." Wall was surveyed at every 500 feet—and at no point was found to be more than one degree off perpendicular.

The man with his hand on the drill collar is V. Goad, Driller.

The Fesemyer Drilling Company are 100% users of HUGHES Rock Bits & Cones *in the Oklahoma City Field*

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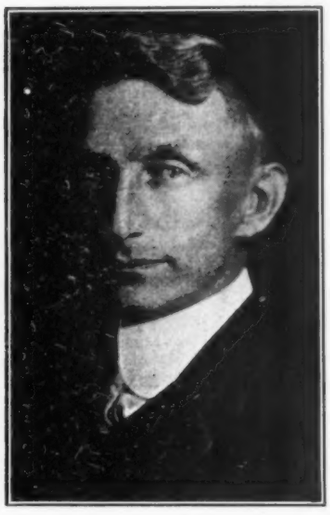
Natural Gas Industry Developments

T. R. WEYMOUTH RESIGNS TO JOIN COLUMBIA CORP.

Thomas R. Weymouth, chairman of the board of directors of the Oklahoma Natural Gas Corp., has announced his resignation as an official of the corporation and affiliated interests and as president of the Natural Gas Engineering Corp., effective November 1, to accept a position as vice president of the Columbia Engineering & Management Corp. with headquarters in New York City.



Thomas R. Weymouth

Mr. Weymouth became president of the Oklahoma Natural organization in 1928 and chairman of the board this year. After his graduation from the Massachusetts Institute of Technology as an electrical engineer, he spent five years in electrical work, engaged in the design and construction of hydroelectric power systems. In 1903 he entered the oil and gas fields in Pennsylvania and has been engaged in engineering and executive capacities with several large companies, including the Iroquois Gas Corp. of Buffalo, of which he was president for five years.

Mr. Weymouth has acted as a consulting engineer in rate procedures both in the United States and Canada. He invented the orifice meter for measuring gases, and integrator for computing orifice meter records and several other devices for use in the oil and gas industry, and originated the "Weymouth Formula" for computing the flow of gases in long pipe lines.

For many years he has been actively connected with various associations, including the American Society of Mechanical Engineers, of which he has recently been elected vice president; the Natural Gas Association of America, and the American Gas Association, and has served on numerous important committees of these organizations.

"It is with extreme regret that we are losing the services of Mr. Weymouth," said E. C. Deal, president of the Oklahoma Natural Gas Corp. "I am speaking for each member of the board of directors and the entire organization in wishing him every success in his new connection. During the more than two years that Mr. Weymouth has been an executive of our companies, the entire organization has come to have the highest admiration for his personality and ability. Our heartiest good wishes go with him in his new field of endeavor."

UNITED NATURAL ERECTS MARKER AT SPEECHLEY SAND DISCOVERY

As a memorial to Samuel Speechley and a monument to the natural gas industry as a whole, a native sandstone boulder weighing 5 tons has been erected at the site of the original Speechley well near Coal Hill by the United Natural Gas Co. of Oil City, operators of the well.

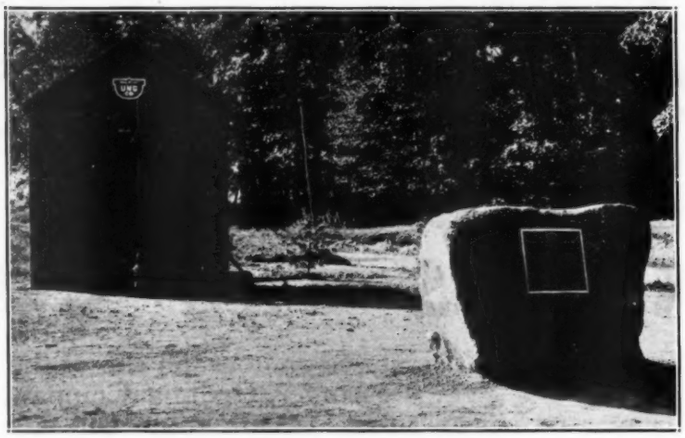
A bronze tablet, 18"x18" in size, tells the purpose of the marker and relates in brief a history of the venerable producer. At the top of the plate in the gas company emblem is placed the words, "Well No. 157 U. N. G. Co." and below is the following inscription:

"Original Speechley sand gas well, drilled by Samuel Speechley; completed April 15, 1885; depth 1,963 feet.

"At this discovery well, the Speechley sand, one of the best known and most prolific gas producing horizons in eastern United States, received its name. When completed the natural gas from this well was sufficient to supply all the consumers in Oil City, Pa. The well is still of commercial value even though the volume and rock pressure of the gas have greatly declined.

"The well is operated by United Natural Gas Co."

The boulder is placed on a small plot of ground directly in front of the original Speechley sand well. A parking lot is provided along Route 57, the Oil City-Fryburg road, directly in front of the marker. Evergreen trees have already been planted, a green lawn is to be provided and in the spring flower beds will be added.



Original Speechley sand well and marker erected by United Natural Gas Co.

The Speechley well marked the discovery of a deep gas producing horizon which has proven prolific in production, consistent in formation and continuous over a broad strip of territory. It is found as far south as West Virginia and throughout Pennsylvania. It is noted for its long life and production, the original well still producing gas in commercial quantity.

The Strong and Hampton Fields of the United Natural Gas Co. are producing from the Speechley horizon almost entirely. The sand also produces a small amount of oil in some localities.

While the Speechley well is not the first gas producer it marked the discovery of a horizon that has meant much to the industry as a whole.

Erection of the marker by the local company has been with the approval and co-operation of relatives of Mr. Speechley living in Oil City.

When the drilling bit pierced the sand in this discovery well on that April day in 1885 the roar of the gas could be plainly heard as far away as the Oakwood Rose Gardens. It is interesting to note that after 45 years of almost continuous operation it is still a commercial well.

The Oil City Derrick industrial number of December 15, 1917, has the following to say of the Speechley Field:

"The Oil City Fuel Supply Co., now the United Natural, in 1883 laid a 6-inch line to wells at McPherson's Corners, Pinegrove Township, 8 miles distant, piping gas from the second and third sands at 900 to 1,100 feet. Samuel Speechley on his farm near McPherson's in 1885 started to drill 3,000 feet in search of the Bradford sand, believing it existed far below the ordinary third sand in Venango County.

"On April 15 the drill penetrated, at 1,900 feet, what has since been termed the Speechley sand, the most remarkable in gaseous annals. At 3 feet the heavy pressure prevented further drilling, and the gas company, leasing the well, turned the volume into the lines to Oil City. The second was larger supplying enough gas for Oil City and branch lines to Titusville and Franklin. Hundreds of wells in a district 30 miles long by 4 miles wide found the Speechley sand from 50 to 100 feet thick, making the territory unusually permanent."

CLYDE W. ENNIS CHOSEN

The appointment of Clyde W. Ennis as chairman of public relations committee of Southern Gas Association, affiliated with the American Gas Association, is announced by Roy E. Chew, vice president of the Southern Gas Association and vice president and general manager of the Birmingham Gas Co. Other members of the committee are: E. J. Armbrewster, New Orleans Public Service Co.; W. H. Bischoff, Savannah Gas Co.; Paul Renshaw, Memphis Power & Light Co.; L. E. Davis, Atlanta Gas Light Co., and J. C. Dyer, Rund Manufacturing Co. of Atlanta, Ga.

Since the entrance of natural gas in the Southeast Mr. Ennis has been directing the public relations of the Southern Natural Gas Corp. and its associated companies. In announcing this committee Mr. Chew said he considers the work of the committee to be of paramount importance to the gas industry and the public.

OIL COMPANIES OFFER GAS TO SASKATCHEWAN

CHATHAM, Ontario, Oct. 18.—An offer to supply natural gas to the cities of Saskatchewan has been formally made by a number of independent oil companies operating in the Turner Valley and other Alberta fields. The companies associated in the proposal include Calmont Oils, Mercury Oils, Miracle Oils, Okalta Oils, Herron Petroleum, McLeod Oil Co., United Oils, Freehold Oil Corp. and others. Representatives of the companies visited Regina recently to present their proposition, which involves a low rate. A profit-sharing arrangement with the Saskatchewan cities was also suggested.

The companies concerned hold extensive acreage in various parts of Alberta with considerable proven production, particularly in the Central and South Turner Valley areas. They also expressed their willingness to drill in Saskatchewan as might be recommended by geologists.

Their proposition stated in part that the companies own and control a daily production of gas amounting to over 210,000,000 feet. This gas, for which there is no market, is now burned at the wells. The amount is three times the quantity necessary to supply all four Saskatchewan cities under the severest winter conditions. In addition to their residual gas production, the companies have an oil and naphtha production around $2,000,000 a year. Their residual gas is not under control or option to any other company. In addition to their Turner Valley acreage the companies hold acreage in the Foremost, Moose Mountain and border areas.

R. E. Williams of Fabyan Petroleums, Ltd., with natural gas production in the Fabyan-Wainwright area has also approached the Saskatchewan cities for a natural gas franchise.

The cities concerned had already under consideration proposals from Northern Utilities, Ltd., backed by New York and Texas interests; Dominion Gas & Electric Corp., C. E. Roth syndicate and a Regina syndicate planning to pipe gas from Montana.

DRILL NEAR TOWANDA, PA.

TOWANDA, Pa., Oct. 18.—Farmers in Wells Township, Bradford County, have pooled 1,200 acres of leases which they have turned over to Net Carson under a drilling contract which provides that the lease owners receive a 25 per cent royalty on all the oil and gas produced and sold from the properties, Carson to do the drilling and operating. The pooled property is 16 miles east of the Farmington Township gas field in Tioga County, the most easterly gas field in Pennsylvania. Carson announces that he will drill his first well on the John Tuton farm.

GAS FOR ANACONDA

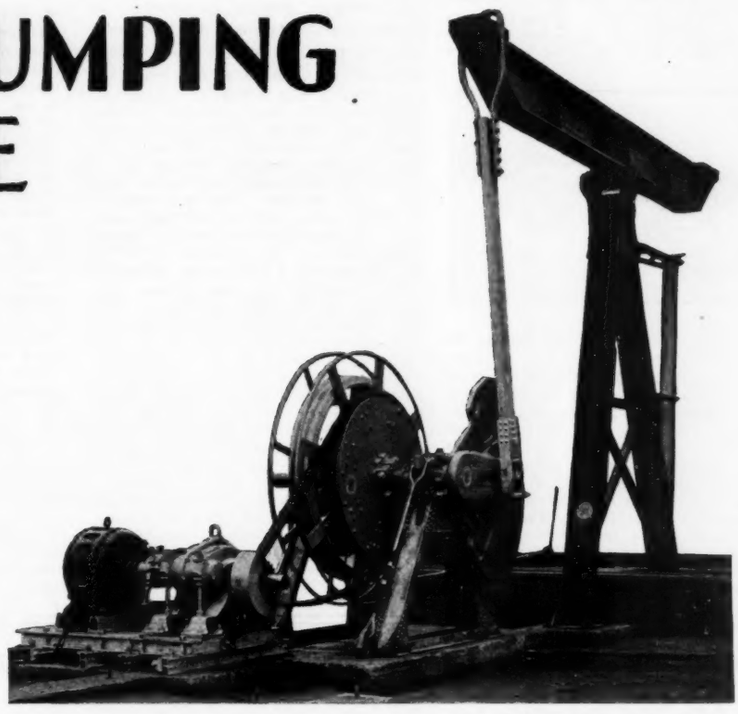
CASPER, Wyo., Oct. 18.—The Montana Power Co. has applied for a gas franchise from the city of Anaconda and it is understood that the application will go before the citizens for a vote on October 29. The same company will apply for franchises in Butte, Livingston and other Montana cities, the entire project involving the expenditure of $15,000,000. It is understood the Montana Power Co. has promised to have gas available in Anaconda by May, 1931.

FORT WORTH ELECTION

FORT WORTH, Tex., Oct. 18.—Fort Worth taxpayers it is expected will vote on municipal ownership and operation of a natural gas distributing plant during the regular city elections on April 13, 1931.

CHAIN RIG

DEEP WELL PUMPING SERVICE



It is almost sufficient in itself to say that here is a portable, trouble-proof, deep well pumping (or cable tool drilling) unit that can be economically installed and operated, doing its work without faltering on the deepest wells.

Oil men everywhere have been awaiting the development of just such a unit as this IDECO Chain Rig. A compact, powerful unit, built entirely of steel. Simplicity of design and unusual freedom from wear are outstanding features.

Write for Bulletin No. 101 giving complete details.

The IDECO Chain Rig may be operated with Electricity, Internal Combustion Engines or Steam Power. A complete IDECO Chain Rig consists of a chain wheel; crank and shaft; tapered wrist pin; standard "A" frame jack posts with roller bearings; "A" frame samson and headache post; center irons; walking beam; pitman and long stroke crank counter balance; and the proper speed reducing unit.

Branch Offices:

New York Wichita Tulsa Oklahoma City Ft. Worth Houston Shreveport
Torrance London, England Buenos Aires, Argentine Maracaibo, Venezuela

Branches in Every Important Oil Field

& Equipment Company

Beaumont, Texas **Los Angeles, Calif.**

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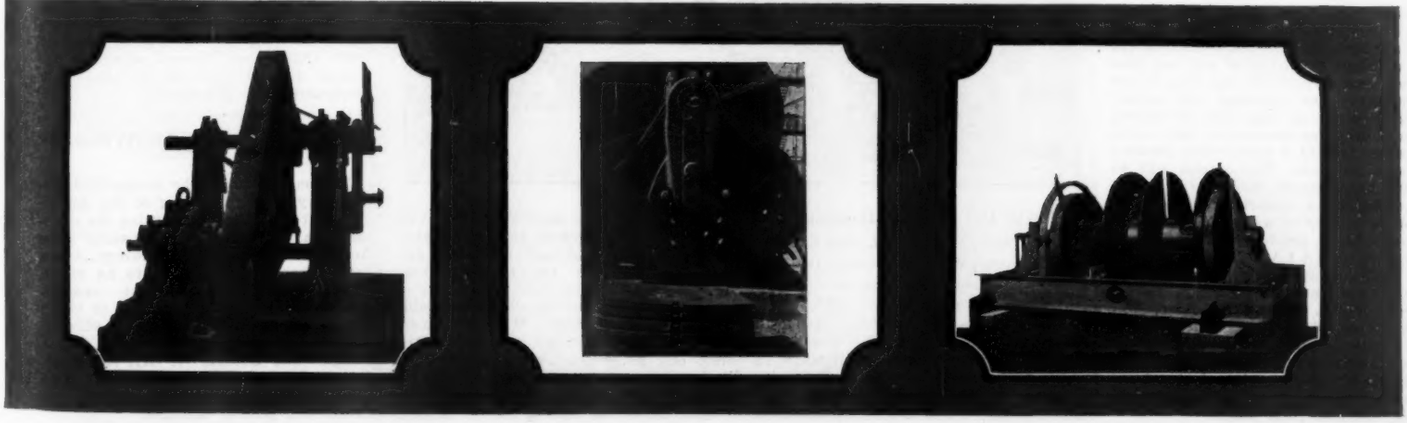
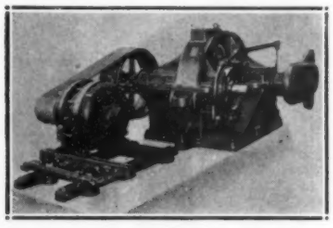


Oil Field Equipment and Supplies

ALLIS-CHALMERS MAKING IMPROVED PUMPING UNIT

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., originator of the Texrope drive and builder of the first oil well pumping unit using this drive in combination with herringbone gears, announce its improved No. 11 pumping unit for deep wells. Some of these units have



been in operation for several months on deep Gulf Coast wells.

Extra strength and durability with high mechanical efficiency and flexibility of arrangement are features of this unit, which is furnished with Texrope drive for electric motor speeds up to 1,200 r.p.m. or for high or low speed engines. The herringbone gears are of a special design used only in Allis-Chalmers units. The gear ratio is 8.34 to 1. The heaviest pumping or pulling peaks are said to be a normal load for these large-capacity gears. The 7-inch main shaft with crank side bearing 18 inches long virtually eliminates the likelihood of shaft breakage or appreciable bearing wear.

The crank counterbalance is quickly detached for pulling operations. This unit can also be used with beam, pitman or grasshopper counterbalance. The motor is mounted on independent universal base rails. The same rails are used for any type or size of motor. Independent motor rails permit mounting motor either in line with the unit or in offset position. House can be built over motor and Texrope drive only, leaving unit in the open with all parts easily accessible.

The nondragging brake of the post type is mounted on the pinion shaft. The pumping speed can be changed easily by changing only the small sheave of the Texrope drive.

STEEL TANK COMPETITION

Competition for improved design in elevated steel tanks is being sponsored by the Chicago Bridge & Iron Works, Chicago. Four thousand dollars in prizes is offered, divided as follows: First, $2,000; second, $1,000; third, $500; five honorable mention prizes, $100 each. Entries in the competition will consist of two drawings of a typical elevated steel tank with a nominal capacity of 200,000 gallons, a height to top of approximately 110 feet, a height to bottom of not less than 85 feet, and a riser not less than 5 feet in diameter. One drawing will include a direct elevation and two horizontal sections or plans one-fourth inch scale. The other will be a perspective drawing to the same scale. The entries will be received anonymously, displayed in a suitable room in an impartial manner and judged by a jury of award consisting of Howard Cheney, president of the Chicago chapter of the A.I.A.; R. W. Zimmerman, architect of Chicago, and George T. Horton, president of the Chicago Bridge & Iron Works. Albert M. Saxe, 430 North Michigan Avenue, Chicago, has been appointed professional advisor for the competition and will handle all communications regarding it. A brochure giving complete details of the competition may be obtained from him.

SOUTHWESTERN TO SEND EQUIPMENT TO BORDEAUX

The rerun unit, gasoline recovery plant and stabilizing equipment for a modern American-built refinery to be constructed in Bordeaux, France, for Societe des Raffineries de Petroles de la Gironde will be provided by the Southwestern Engineering Corp., Los Angeles, Calif. The refinery will include a topping unit of 7,500 bbls., two 2,500-bbl. cracking units, one 4,000-bbl. rerun unit, a vapor recovery and absorption plant for the recovery of a minimum of 50 per cent of butane, 126,000-gallon stabilizer for gasoline and pressure distillate, complete treating system and the necessary auxiliaries to make complete refinery unit of modern design. The general contractors are Societe des Installations Industrial.

R. B. Millard, who for the last year, has been establishing a European office, has placed Dr. Emeric Kroch and M. C. I. Chadinoff in charge of the Brussels and Paris offices and has returned to Tulsa as Mid-Continent district manager. Floyd James and R. H. Matson, petroleum engineers from Los Angeles, have been transferred to the Tulsa office where additional space has been taken in the Mayo Building to accommodate the additional engineering force. Additional space has been acquired at the plant of the Vulcan Steel Tank Corp. for a warehouse and a new crane will be installed to facilitate the loading of the large stock of Southwestern equipment maintained there.

NEW BROWN INSTRUMENT HAS VALUABLE FEATURES

The new Brown Model 801 indicating pyrometer controller, made by the Brown Instrument Co., Philadelphia, Pa., can be supplied as an automatic control pyrometer, resistance thermometer, tachometer, or CO_2 meter. Advantages of this instrument as named by the manufacturer are: (1) Reading observed directly on 6-inch scale. (2) Index on scale for setting to exact control point. (3) Control point instantly and easily adjustable. (4) All wiring terminals and motor enclosed. No danger when used in the presence of explosive or inflammable gases. (5) Mercury switches up to 30 amperes capacity, eliminating the necessity of relay equipment. Make and break occurs in sealed glass tube. No danger of spark causing explosion. (6) Suitable for "on and off" or "three position" control through switches, valves, dampers, etc. (7) Available with patented safety device which opens furnace circuit if thermocouple or wiring fails, preventing burning out furnace. (8) High internal resistance, insuring accuracy. (9) Automatic internal compensation eliminating cold junction errors when instrument is supplied as a pyrometer. (10) Simplicity and ruggedness insures minimum of attention.

The control mechanism combines the basic principle of the Brown automatic control recorder with the new feature of mercury contacts for breaking high currents.

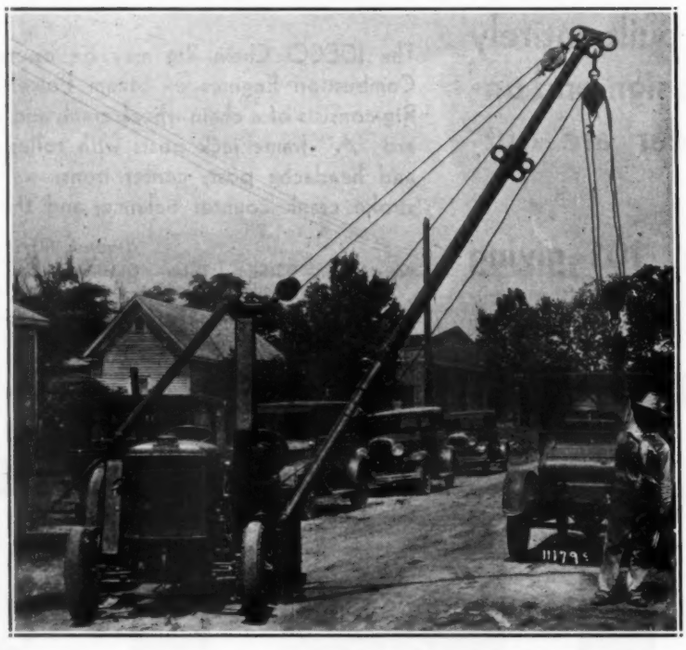
COSTLY JOBS SAVED BY NEW SUCKER ROD SOCKET

Many sucker rod socket bowls are ruined when released from an engaged rod, as it is necessary to drive the bowl back on the rod in order to free the slips. This makes necessary the rebuilding of the socket for the next job. When a hold is taken on a string of sanded or corkscrewed rods which cannot be pulled, the operator usually must resort to one of three operations: Stripping the tubing; breaking the hold, which ruins the bowl and loses the slips, or backing off or unscrewing.

The new "Oilwell" quick releasing sucker rod socket eliminates these operations. When a hold is taken and the rods cannot be pulled all that is necessary is to place a wrench on the rods and turn to the right five or six times. This operation tightens the rod joints but releases the hold of the socket. It is never necessary to back off or unscrew, strip the tubing, or ruin the socket by breaking the hold.

When the broken rods have been pulled it is not necessary to take an "Oilwell" socket apart in order to release the hold. Simply turn the releasing top to the right five or six times and the hold of the socket is released. The sockets are made in three sizes, to run in 2-inch, 2½-inch or 3-inch tubing.

SIDE BOOM UNIT CARRIES LOAD OF 3,000 POUNDS



W-K-M Co., Inc., of Houston, Tex., manufacturer of industrial, pipe line and oil field equipment, announces the production of a new side boom unit for attachment to the Model "U" Allis-Chalmers industrial tractor. Although designed especially for pipe line work, the machine is of wide availability in construction jobs. It lifts and carries loads of 3,000 pounds when properly counterweighted and much heavier loads when a stiff-leg is employed. The unit is easily maneuvered on the job or when traveling, being compact in design and construction, with the main working parts of the machine close to the body of the tractor and controls within accessible reach of the operator. While in transportation from one job to another, the unit can be driven at the speed of a passenger car. Installation, which requires no drilling or cutting, can be accomplished in the field or at the factory.

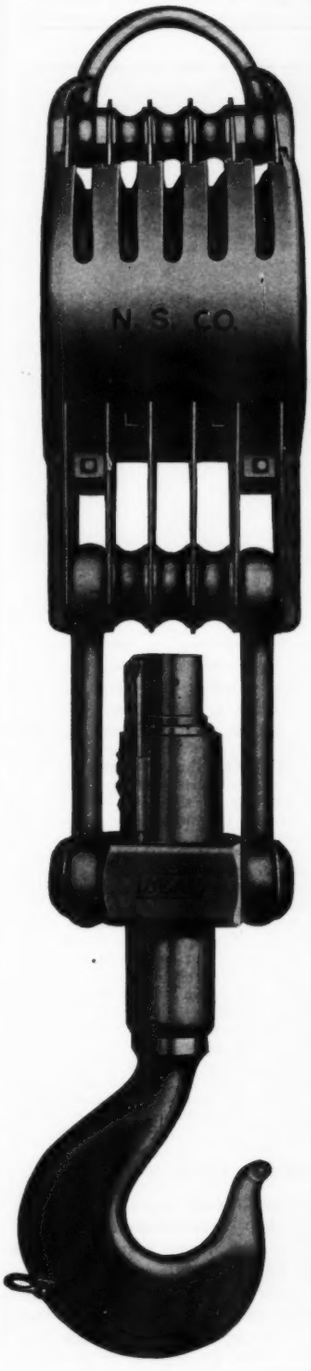
NEW TUBULAR SALES MANAGER

In announcing the appointment of M. J. Czarniecki by the A. M. Byers Co., Pittsburgh, Pa., to the newly created position of manager of tubular sales, H. W. Rinearson, vice president stated that departmentalizing sales activities was necessitated by the proposed expansion program of the Byers company to broaden the markets for the use of wrought iron in forms other than pipe. Mr. Czarniecki joined the Pittsburgh sales organization of the A. M. Byers Co. in 1913 and the following year was assigned to the New York office where he remained until his transfer in 1915 to Chicago. After war service he returned to Chicago as district manager and the following year was transferred to New York where he remained as district manager until 1925, when he was appointed assistant general manager of sales with headquarters in Pittsburgh.

ACIPCO OBSERVES ANNIVERSARY

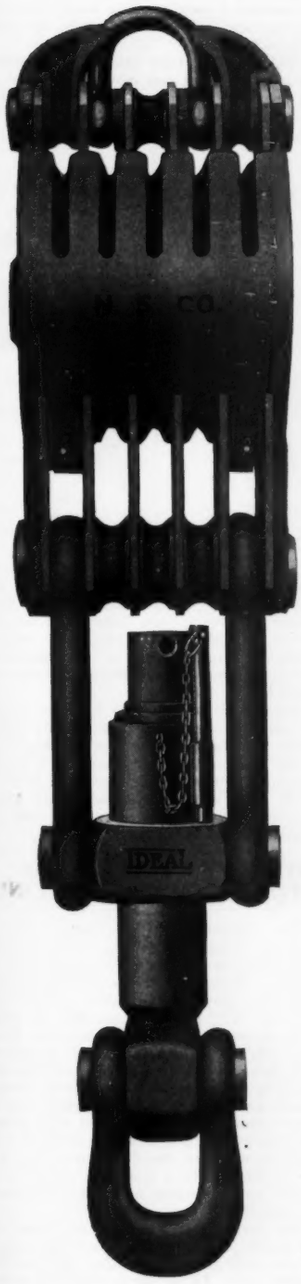
This month marks the twenty-fifth anniversary of the founding of the American Cast Iron Pipe Co. During the quarter of a century that has passed since Acipco made its bow to industry, it has grown from a small plant to an extensive organization with great capacity. The company was incorporated in Georgia on October 9, 1905. Its first officials were: John J. Eagan, president; E. L. Douglas and William W. Orr, vice presidents; J. W. Blair, treasurer; Miss Charlotte Blair, secretary; and E. E. Linthicum, general manager.

IDEAL



COMBINATION TRAVELING BLOCK AND SPRING CASING CLEVIS

COMBINATION TRAVELING BLOCK AND SPRING CASING HOOK



Descriptive Bulletin No. 60A Sent on Request

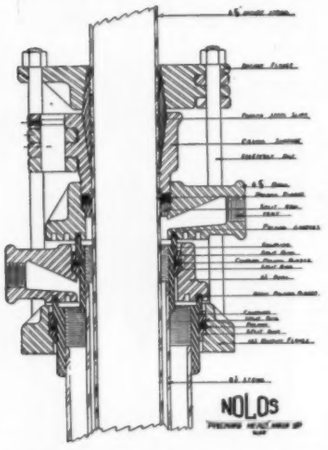
THE NATIONAL SUPPLY COMPANIES

Oil Field Equipment and Supplies

O. W. I. PACKING HEAD SHOWS NEW FEATURES

The Oil Well Improvements Co., Tulsa, is making a new packing head featuring packed slip joints and is held by eight 1½-inch bolts.

This packing head anchors each string of casing against end movement either up or down. The various bowl sections are



progressively interchangeable; that is, any size bowl will fit directly upon any larger size bowl, thus 5-inch can fit directly on 10-inch or 12½-inch casing without the necessity of intermediate spools, and having the advantage of minimum height.

Each bowl section may be used interchangeably as a packing head against the collar or a braden head against the pipe.

The inside string of casing is held in place by double-acting slips in a hinged bowl. The upper movement of the pipe is prevented by hinged anchor flange conforming to the slips.

HOT DOPE KETTLE MADE FOR WORK ON PIPE LINE

The Littleford "Hot Dope" kettle, made by Littleford Brothers, Cincinnati, Ohio, and newly designed for pipe line work, is strong, splash-proof and capable of turning out a large volume of melted material. The kettle is mounted on 2½-inch square axles, front and rear. The rear wheels are 34 inches in diameter with 6-inch steel tires; front wheels 26 inches in diameter with 6-inch steel tires. There are heavy roller bearings with grease reservoirs in hubs and dust caps over them. The tongue at the front of the kettle is made to stand severe strain. It can be coupled to a wagon, a truck or a tractor and the whole outfit pulled wherever needed.

The inside melting tank is made of one-fourth firebox steel and three-sixteenths inch steel is used for the outside furnace shell. All seams in tank and shell are double-lap, electrically welded and leak-proof. Both tank and shell are strongly reinforced inside and out. The kettle is securely anchored to the axles and is slung so low that upsetting is practically impossible. At the same time there is sufficient ground clearance.

Two large Littleford torch type oil burners supply heat for the kettle. These burners are outside of the combustion box, therefore easy to get at. Coils are kept cool and carbonizing is reduced to a minimum. The special insulated combustion box directs heat from the burners to the far end of the kettle. Heat then circulates back to the vent stack, traveling the full length of the kettle twice, giving double heat circulation.

NOTES ABOUT TRADE LITERATURE

The Kewanee Boiler Corp., Kewanee, Ill., is sending out a 34-page catalog of Kewanee firebox boilers.

A new leaflet, "Single Stage Condensate Pumps," has been prepared by the Westinghouse Electric & Manufacturing Co. These pumps are used principally where low operating heads are encountered, multistage units being furnished for applications where high pumping heads prevail.

The October number of the Watch Tower, published by the Chicago Bridge & Iron Works and Horton Steel Works, Ltd., Chicago, contains articles on "Filling and Storage Evaporation Losses from Pressure Containers" and "Continental Tank Farm" in addition to others of interest.

The "Aquagel Drilling Mud Handbook" has been printed by the California Talc Co., Los Angeles, Calif. Its 40 pages present much information of value concerning drilling mud.

Two bulletins are being sent out by the American Welding Co., New York, one describing Rowland forge-welded containers for shipment of liquefied petroleum gases and the other giving details of construction and other data on forge-welded storage tanks for propane, butane and other gases and liquids contained under pressure.

The Oil Well Supply Co., Oil City, Pa., is sending out the second edition of its new bulletin No. 94 on "Oilwell" boilers, accompanied by a folder describing a releasing sucker-rod socket.

"Service and Products" is the title of a neatly prepared bulletin issued by Petroleum Engineering, Inc., Tulsa and Fort Worth. The company's activities include consultation, research, design, engineering and construction and operation in several branches of the oil industry.

A new type of explosive manufactured by the Hercules Powder Co., Wilmington, Del., is described in a booklet, "Hercules Gelamite," just issued. Gelamite is a substitute for gelatin dynamites up to 60 per cent strength.

Fusion welding is the subject of a new bulletin issued by the Babcock & Wilcox Co., 85 Liberty Street, New York. This publication discusses a method of welding which, the company states, eliminates the necessity for long training or great skill on the part of the operator and produces welds of great tensile strength, shock resistance, ductility and ability to withstand repeated stresses.

The Refinery Supply Co., Tulsa, announces its bulletin No. 15, containing a description of Ac-me and R. S. specialties in scientific and power plant equipment.

The Hercules Motors Corp., Canton, Ohio, manufacturer of heavy-duty engines and power units, has issued two new bulletins containing advice as to the selection of the proper type of Hercules power plant for any given requirement.

A catalog of belting, packing, hose, matting and miscellaneous items manufactured by the Diamond Rubber Co., Inc., of Akron, Ohio, is off the press. The cover and mailing envelope were printed from rubber engravings, hand cut from sheet rubber manufactured by the Diamond company.

HUGHES TOOL CO. IS ERECTING $350,000 WAREHOUSE

The Hughes Tool Co., Houston, Tex., is erecting a $350,000 finished stock and shipping department building as a further step toward giving efficient service on Hughes rock bits, core bits, tool joints, drilling valves, fittings, etc. The two-story building with basement will be of reinforced concrete construction, equipped with modern facilities and fire-proofed throughout.

Mechanical refrigeration will provide for drinking water on each floor, while the blower system of steam-heating will afford comfort in winter.

Of the total floor area of 147,000 square feet, sufficient open space will be assigned for the laying out of orders to insure through check and that all instructions have been complied with as to marking, etc.

The design of construction and equipment includes the following advantages which will further aid the Hughes Tool Co. in efforts to better serve the industry: (1) Railroad switch track on one side of building, serving six doors, making possible the loading of six cars, simultaneously. (2) Six doors likewise serve opposite side of building for loading trucks, with crane projecting over driveway. (3) Basement and first floor served from driveway on ground level by ramps, allowing for handling of material by trucks and trailers. (4) All floors equipped with electric elevator service. (5) Material in basement and on first floor handled by power trucks and electric cranes, as well as gravity conveyors. (6) Installation of sprinkler system throughout, minimizing fire hasard.

LINK-BELT PROMOTES MAXWELL

An announcement from the Link-Belt Co., Indianapolis, Ind., states that Warren Maxwell has been appointed superintendent of its Dodge works to replace F. J. Oakes, deceased. Mr. Maxwell attended Wabash College, Marion Military Academy, and was graduated from the United States Naval Academy, Annapolis. He joined the Link-Belt Co. in 1922. In January, 1929, he was made assistant superintendent, from which position he has just been promoted.

MEN KNOWN *in* THE EQUIPMENT FIELD

James F. Corcoran

Having neglected to include sailing among his modes of travel, James F. Corcoran's district as special oil field representative of the Trimont Manufacturing Co. is somewhat circumscribed. When he hits the Pacific on the west, the Atlantic on the east and the Gulf on the south he has to stop. However, he is not one of the fault-finding kind and instead of complaining about the limitations of his territory he makes good use of what he has. He eschews the Pullman and covers the ground in his automobile.

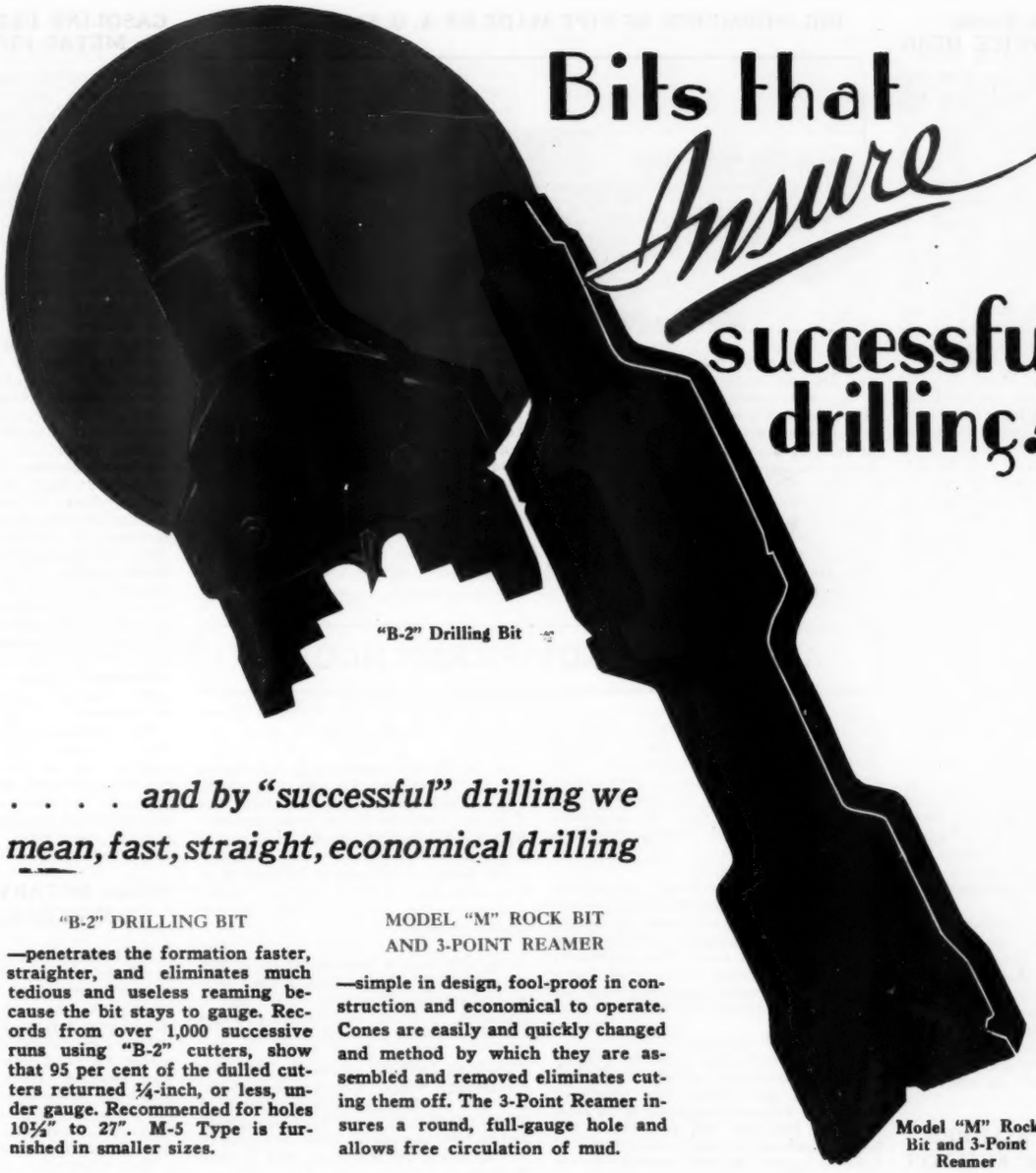
The result of this system is that Mr. Corcoran touches the same points in the Mid-Continent area that he would if he were Mid-Continent representative only, the same in California as he would if he were California representative, etc. He gets around to the home office in Roxbury (Boston), Mass., every eight months or so.

Mr. Corcoran has handled Trimont tools as jobbing salesman for 15 years and directly out of the plant as oil field representative for five years. Golf is his chief diversion.

BETTIS LETTER CONTEST

Offering 20 cash prizes ranging from $200 to $5, the manufacturers of Bettis protectors are staging a contest that is expected to create interest. It is the desire of the manufacturers to obtain expressions regarding the service of their product in various fields. They are holding the contest for the purpose of obtaining letters. A brief, well written letter is all that is required to become an entrant in the contest. The letters are to set forth the experience of the writers in the use of Bettis protectors in oil well drilling. A total of $400 is to be awarded and the contest will close December 31. Entrants should forward their letters to the Patterson-Ballagh Corp., Insurance Exchange Building, Los Angeles, Calif., before that time. A bonus of $5 will be given for each photograph of Bettis protectors accepted by the contest committee aside from letters submitted.

Bits that Insure successful drilling!



"B-2" Drilling Bit

. . . . and by "successful" drilling we mean, fast, straight, economical drilling

"B-2" DRILLING BIT

—penetrates the formation faster, straighter, and eliminates much tedious and useless reaming because the bit stays to gauge. Records from over 1,000 successive runs using "B-2" cutters, show that 95 per cent of the dulled cutters returned ¼-inch, or less, under gauge. Recommended for holes 10½" to 27". M-5 Type is furnished in smaller sizes.

MODEL "M" ROCK BIT AND 3-POINT REAMER

—simple in design, fool-proof in construction and economical to operate. Cones are easily and quickly changed and method by which they are assembled and removed eliminates cuting them off. The 3-Point Reamer insures a round, full-gauge hole and allows free circulation of mud.

Model "M" Rock Bit and 3-Point Reamer

Write for illustrated Bulletin No. 8-A, containing complete information.

GLOBE OIL TOOLS CO.

LOS NIETOS, CALIFORNIA.

Successors to H. C. Smith Manufacturing Co., Inc.; Wieman-Kammerer-Wright Co., Inc.; National Tool & Metals, Inc.

Branches: Ventura, Calif. Bakersfield, Calif. Kettleman Hills, Calif. Taft, Calif. Hobbs, New Mexico Oklahoma City, Okla.

Oil Field Equipment and Supplies

FLUID LEVEL IN TANK READ AT OFFICE DESK

The MacCreedy fluid level indicator, manufactured by J. H. Bunnell & Co., 215 Fulton Street, New York, N. Y., may be installed on any tank or reservoir, enabling the operator to read the levels at any point or points. It is designed to be impervious to corrosion and to be accurate under all conditions.

A transmitter is connected directly to a specially designed float system. It is electrically connected to one or more indicators located wherever desired. When the level of fluid rises or falls in the tank reservoir, the float changes in position with the change in level of the liquid. A perforated tape attached to the float passes over a wheel directly connected to the transmitter. When the float moves one-eighth inch an electrical impulse is sent by the transmitter to the indicator. The indicator shows on a dial the level of the fluid in the tank.

Any number of indicators may be centralized at one office, enabling the operator to read the level of every tank on his farm without leaving his desk.

The worker does not now have to climb to tank tops and remove covers allowing toxic gases to come into his immediate atmosphere in order to gauge the tank. Gases hazardous to human life are also corrosive to construction materials. The float system and all connected with it are built of noncorrosive metal. The transmitter is hermetically sealed from the atmosphere and all injurious acids or gases. To prevent ignition of combustible gases, all electrical contacts are made by mercury in sealed glass tubes.

The MacCreedy fluid level indicator does not depend for its accuracy on electrical voltages or resistances. It does not stop working and lose its accuracy when a power house shuts down. It is battery operated and uses a small current impulse at a voltage of about 25. No holes are cut in the tank. All installation is made on the manhole cover.

Wires connected to the transmitter are enclosed in a lead sheath, run from the top of the tank down the side, and underground or aerially, as desired, to the point where the indicator is to be installed. This indicator may be installed in a near-by pump station or may be installed miles away in a central office singly or in groups, each indicator giving the level of the oil in the connected tank.

FILTER-FUNNEL ASSURES CLEAN OIL FOR AVIATOR

One of the important items of G & B aviation fueling equipment is the filter-funnel, which works for the benefit of pilots and oil companies at the same time. Its regular use is the pilot's assurance that his fuel lines will not clog from foreign matter in the gas, and that his motor will run longer and better between overhauls. For the oil company it offers a way of insuring its aviation fuel being delivered to planes in its original pure, clean state.

The filter-funnel has the three main qualifications for an aviation filter:

Safety. Metal-to-metal contact reduces fire hazard, and the quick shut-off valve on the discharge tube stops the gas flow instantly, preventing tank overflow.

Speed of delivery. The filter-funnel passes without backing up, fuel dispensed from cans, hand pumps or the motor-pump equipped G & B "Aeropit."

Efficient fuel filtration. Comparative tests with all makes of aviation fuel filtering devices now offered have shown the Gilbert & Barker filter-funnel to be eficient in actual percentage of elimination of foreign matter.

BIG SHIPMENTS OF PIPE MADE BY A. O. SMITH CORP.

The photograph shows the pipe storage and loading yards of the A. O. Smith Corp., Milwaukee, Wis., with pipe destined for some of the large pipe lines now in construction. There are 225 miles of pipe in the storage and on the cars, ready for shipment to the Missouri Valley Gas Co., Southern California Gas Co., Electric Bond & Share Co. (Texas Construction Co), Southern Counties Gas Co., Phillips Petroleum Co., Southern Natural Gas Co., Continental Construction Co. (Chicago line), and Columbia Gas & Electric Co.

The A. O. Smith Corp. pipe storage, when filled to capacity, holds 77,000,000 pounds of steel pipe—450 miles in the 10-inch size. The storage is in steel crates, each of which contains one carload, regardless of size. The entire crate is lifted by a 50-ton crane, making loading of the cars a simple matter. Shipments are made at the rate of 800 to 900 cars per week.

On September 24, 19230, a record run of 33½ miles of pipe was made.

AMONG THE EQUIPMENT HOUSES

The Resistcor Engineering Corp., of Tulsa, is opening a new branch office in the Magnolia Building, Dallas, Texas, with A. S. Crutcher in charge and Dick Goering assisting. Since it was organized 15 months ago, the company has installed branch offices in Memphis, Tenn., and Houston, Texas, and Muskogee, Okla.

The A. O. Smith Corp., Milwaukee, Wis., had in September the biggest month in pipe shipments in its history. It shipped 2,911 car loads, equivalent to 617½ miles, a total of 89,800 tons. This represents 31 per cent increase in car loads and a 43 per cent increase in mileage over the previous high month which was July of this year.

The Bigelow-Liptak Corp. of Detroit, Mich., manufacturer of suspended furnace walls and arches, has appointed Charles C. Plummer, manager of its sales office in Chicago. W. D. Dreiske has been transferred to the Detroit office as sales manager. He was formerly in the Chicago office.

Announcement of the appointment of J. H. Horlick, Jr., as assistant director of sales, explosive department, Hercules Powder Co., Wilmington, Del., is made by C. C. Gerow, director of sales. Mr. Horlick has served for years as manager of the service division, explosive department. In his new capacity he will take over the duties of the late Fred F. Smith. J. Barab will be the new service division manager.

The Republic Steel Corp. has opened a district sales office in Tulsa with C. S. Powers in charge as district sales manager. Mr. Powers formerly was connected with the Republic sales office in Detroit. The Tulsa district will include the State of Oklahoma and a portion of Kansas.

After winning the Industrial League pennant and the city championship of Dallas, the Guiberson Club, official sandlot representatives of the Guiberson Corp., entered the Texas State race and snared the Texas amateur baseball championship, tumbling over the Houston Power & Lighter's in the final series.

W. H. Ealy has been made manager of the Clark Machine Co., Wichita Falls, Tex. Fred Sharp, formerly with the Eclipse Lubricator Co., is now connected with the Clark Machine Co.

The board of directors of Trimont Manufacturing Co., Roxbury (Boston), Mass., announces that Edward Blake is now general manager.

The Oil Well Equipment Corp. of Los Angeles, Calif., and branches have been made distributors for the "O.I.C." line of standard, medium and high pressure valves in bronze, iron and semisteel.

Jack C. Ballagh, secretary of Patterson-Ballagh Corp., Los Angeles, Calif., has left for London in the interest of Bettis protectors and drill stabilizers and to visit various oil fields in Germany and Rumania. He is accompanied by Mrs. Ballagh.

The Tulsa Fine Mechanic Shop., Tulsa, owned by A. B. C. Dague, has changed its name to the A. B. C. Manufacturing & Machine Works and will do a general line of machine work in addition to precision tool machine work.

BYERS' LIGHT-WEIGHT TRAILER

A new style, rubber-tired trailer is announced by the Byers Machine Co., Ravenna, Ohio, for transporting its Model 40, three-eighths yard shovel and crane which weighs 10 tons. Unlike trailers of the platform type, Byers' trailer consists of only two separate sets of heavy rubber-tired wheels on bar axles which are temporarily attached to structural brackets on the under side of the trailer bed frame when the unit is to be moved. Any 5-ton truck or small tractor can haul the Model 40 on this trailer by hooking up to the tongue on the front wheel and axle assembly. By using the three-point suspension principle the front axle can make short turns and is held with a single bolt under a heavy trunnion and bearing.

GASOLINE USED BY NEW METAL CUTTING TORCH

Torchweld Equipment Co., Chicago, announces a metal-cutting torch which uses gasoline, and which according to the company has not only passed laboratory tests but has proved successful in industrial use.

Here are advantages of a gasoline cutting torch enumerated by the company:

It makes it possible to use a standard kind of fuel that is familiar to everyone and is immediately obtainable almost anywhere. Small plants located in remote places can make profitable use of the gasoline cutting torch. There is no need of running short of fuel on the job. An extra 2-gallon tank can be kept handy or the can may be filled from a near-by gasoline pump. It saves storage space. It reduces bulk and weight of equipment. It reduces metal cutting costs.

The Torchweld company says the Torchweld gasoline cutting torch is likely to effect large economies in the machinery field, its employment eliminating the necessity for special forgings and castings by cutting parts from stock sizes of machinery steel, plate, bars, billets, angles, channels and other obtainable material. It can also be used for cutting bolt and rivet heads, slats and openings of all sizes and shapes, and for large work can be employed in a cutting machine. It opens up new economies in the railway field by its speed in cutting bulky scrap for reclamation or shipment to purchaser.

The gasoline cutting torch unit consists of cutting torch with four gasoline cutting tips; 25 feet high-pressure oxygen hose; 25 feet flexible metallic gasoline hose; 2-gallon welded gasoline tank; high-pressure, two-gauge oxygen cutting cylinder regulator; wrenches; goggles and gloves.

STEEL ROTARY HOSE OF UNIVERSAL JOINT TYPE

Steel rotary hose of the new type universal joint construction is now being manufactured by the Elliott Manufacturing Co. of Los Angeles, Calif. The result of over a year's development in field testing the Elliott hose consists of 11 simple universal joints connected by 10 pipe sections. These flanged universal joints are interchangeable. The joint itself is machined from solid bar S.A.E. 1035 steel, heat-treated throughout. The outer flange is a steel forging.

The straightline construction of the joints offers the least possible resistance to the cutting action of the sand particles carried in the mud. No sharp bends or right angles are formed and no distortion or contraction of the fluid area takes place. It is flexible and places less wear on the swivel. The safety factor afforded is over 8,000 pounds per square inch.

When hung in the derrick a rigid steel clamp is provided for each pipe section through which a steel sand line is strung and anchored to the swivel and to a leg of the derrick.

SPECIALIZES IN OIL TOOLS

Schillinger & Sons, Inc., whose plant is on the Sand Springs Road, Tulsa, have perfected many oil-field inventions that are now in wide use. The company specializes in the manufacture of special tools, dies and small instruments and the repairing of scientific appliances. "Sasto" is the trade name for the line of dies and tools made. The shop is equipped to do general machine work, build special machinery and to make special cutting dies and punches to order.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

ESTIMATING GAS RESERVES

How much dependence can be placed on the estimates of gas reserves in any given field? The estimates made by two or more engineers on the amount of gas in a structure never come anywhere near being alike, although they have exactly the same facts to work from and probably use the same method of making their estimates. Estimates that I have been interested in and that were made by the saturation method or the rock pressure decline method have been far apart in their results and almost invariably all of them have been too high.—E. H. W.

In a general way your statements are true but experience has shown that engineers will differ in their estimates of reserves in many commodities, and, while it is assumed that they are using the same methods of determinations, check of details shows that there are slight variations and when they are dealing with volumes of gas totaling millions or even billions of cubic feet a very slight change in the factors used will make large differences in the final estimates.

This problem has been given much consideration by engineers for they have several angles to consider in making their estimates of reserves and the purpose for which the reserve is to be used also has its influence on the details considered.

In May, 1929, the Bureau of Mines issued its report of investigations, Serial 2,929, covering "The Study of a Fundamental Basis for Controlling and Gauging Natural Gas Wells" by H. R. Pierce and E. L. Rawlins. It is quite complete and they are endeavoring to have it adopted as standard for work of this kind in all gas fields and if this is done it is felt that these discrepancies will be eliminated to a large extent and much closer estimates obtained.

It is recommended that you have your engineer get from the Bureau of Mines copies of this publication which is in two parts and make a careful study of it.

HAVE YOU BEATEN THESE?

To settle an oil field argument please advise me what was the most hole made with rotary tools in any 12-hour tour, where it was made and by whom.—F. C. F.

Many stories are told about remarkable drilling records made by rotary crews but this department does not have any verified reports that tell the most hole made in any 12-hour tour.

In Oklahoma City Pool it is common practice to drill the 12½-inch hole 2,000 feet in five days' time, or at the rate of about 200 feet per 12-hour tour.

In the Hobbs Pool, New Mexico, the Gypsy Oil Co. recently finished a well that was drilled 4,186 feet in 23½ days' drilling time. This is at the rate of 178 feet per 24 hours and fast time for that area where it usually takes about 75 days to complete a well.

In California they have made some remarkably fast drilling records and the same is true in the Gulf Coast fields. A great deal depends upon the type of formation drilled, for in many fields they can sink the bit just as fast as they can wash out the formation and lower the drill stem.

This does not answer your question, of course, but it will have to do for the time being. In the meantime it is hoped that drillers throughout the world will sumbit their records, which should provide interesting data on this subject.

CHOOSING THE WELL SITE

If outcroppings, seepages or other evidences of oil are found does the oil prospector follow any particular rule in deciding just where to drill a test well? For instance, if we find a seepage at a certain spot, should the well be put down according to any rule with reference to that seepage or is it all a matter of chance and does the driller just act on a hunch?—S. S. F.

A thorough geological survey which usually precedes the drilling of a test well takes into account more things than outcroppings and seepages. Factors involved in determining the site for a test well may be divided roughly into two classes: (a) Those where structural features are evident, as where outcroppings, oil seepages, asphaltum residues, etc., are found. (b) Those where structural features are not known. as where they are covered up, but where gaseous emanations, oil on spring or lake waters and other signs of oil may be present.

Where structural features are favorable for oil, definite signs of the presence of oil sometimes are found. Where dips are known and structural features are outlined, selection of the well site becomes a matter of judgment, taking into account the degree of dip of strata, thickness of the overlying cover and deformation of strata, that is, sudden change in dips caused by faulting and minor folds.

Answering more specifically your question concerning any rule that should be followed in locating a test hole with reference to an oil seepage, it is the practice of prospectors to make the location down the dip from such seepage or other oil sign at the outcropping of the oil sand. Dorsey Hager, in his "Practical Oil Geology," says this simple rule often has been ignored with heavy financial loss as the result. In those cases—and there have been many of them—where drill holes have been started above the outcrop of the oil sand negative results were assured from the beginning so far as the top sand was concerned, though production sometimes was found in the sand below. Where no outcrops are found or where it is designed to drill for oil sands other than those outcropping the rule referred to here does not apply of course. In such cases the structural features are determined by careful surveys.

You understand, it is assumed, that commercial deposits of oil or gas usually occur in the higher parts of folds or wrinkles of the earth's surface called anticlines, domes and monoclines. When the surface axis of the anticline or other fold has been determined the dips of the sides or flanks must be known to determine the shape of the anticline and the inclination or dip of the beds away from the axis. (The axis, as you know, is a longitudinal plane about which the folding apparently has taken place, and it extends from the surface to the depth at which the fold dies out.) If the anticline is symmetrical the test hole should be placed on the axis. If one flank of the anticline is much steeper than the other the well should be drilled on the flank of the less inclination. This is for the obvious reason that on the steep flank the oil sand necessarily runs more nearly vertically with correspondingly increased likelihood of the drill missing it altogether.

WHY WAS IT CALLED THAT?

SEDIMENTARY ROCKS

Sedimentary rocks are so called by the geologist because they are formed from sediment laid down on the earth millions of years ago by water, wind or ice. Throughout the centuries enormous quantities of mud and sand and vegetable and animal matter were carried into the ancient seas by streams. This silt was spread in great blanket-like layers on the bottoms of the seas. In the process of time these layers of silt became the shales, limestone and sandstone—the sedimentary rocks—from which the petroleum riches of today are derived.

HAS LEAK IN CASING STRING

Will you please tell me the best method of cementing a small leak in a string of casing? I can use the slush pump and get some returns. I can pump cement out of the leak, but cannot determine how long to pump, as I do not know the depth of the leak. I should think there would be some kind of plug or plugs that could be used in this case, or some kind of plug that could be used with bailer.—J. J. B.

This work can be done in a satisfactory manner by the use of a plug and proper equipment for pumping the cement back of the string, but engineers say this is not a job that should be undertaken without this special equipment.

Oil well cementing companies have cement wagons with high pressure pumps and all equipment for just this kind of work and they have been doing this class of repair work so long that their men are expert at it. It is therefore recommended that you get in touch with one of them. They can send a truck to the well and do the work for you at a reasonable cost.

The reason this advice is given is that your well is in jeopardy and it is not a difficult thing to run into a bad fishing job if you attempt to make repairs yourself without proper equipment. Others have written for advice as to how to get out of such fishing jobs after they had tried to repair their wells.

CONCERNING MINING FOR OIL

While thinking about the subject of recovering oil by the mining method I found myself wondering whether this way of getting oil would make it possible to recover oil in fields already exhausted so far as the ordinary drilling and pumping methods are concerned. My understanding is that the ordinary methods of recovery get only about 25 per cent of the oil in a pool. Now then would it be possible to go into a field where this 25 per cent already had been taken and get the rest of the oil, or any considerable part of it, by the mining method?

Another thing. Do not drilled oil wells interfere with mining operations in an old field, say, where the ground has been pretty well honeycombed with holes made when the field was a flush one? Or are the mining galleries so made as to avoid the old holes?—T. G. E.

In connection with your question it may be well to point out with changed conditions in the oil industry the advisability of mining oil sands will change also. With a great potential of oil in sight the need for mining oil sands is negligible, but if this country should come to a time when more oil than can be produced by the present methods is needed then mining probably will be the next method resorted to in getting it.

There seems to be a constantly changing opinion among petroleum engineers as to the amount of oil left in oil pools and with improved technique in recovery it is a known fact that the amount of oil being left in the sands is much less than it was formerly assumed to be.

Then with further study of sand porosities, saturation and other properties in recent years, the engineer is beginning to realize that perhaps some of the estimates made concerning the original content of oil sands was much too high and it has been proven by coring oil fields that the actual amount of oil remaining in the sand would not justify further expense for its recovery.

With improved production methods and the recharging of oil sands along the lines now being followed in the Sugarland, Tex., Field by the Humble Oil & Refining Co., and described in an article by Neil Williams in the August 7, 1930, issue of The Oil and Gas Journal the necessity for mining will be reduced to a minimum.

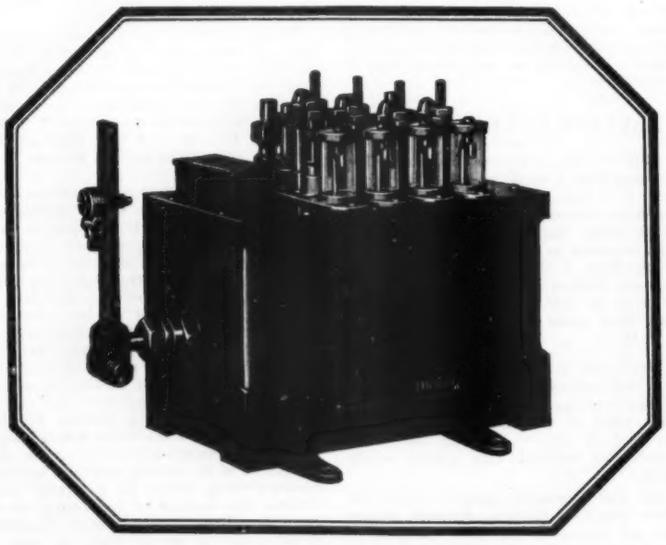
The present method of production will not interfere with the future mining of oil if it is found that sufficient is left to warrant the expenditure, for in Pechelbronn, France, they have mined oil sands in a field that has long produced oil by the drilled hole methods.

This answer is not to be taken as meaning that the industry should neglect research in mining of oil sands. On the contrary during this period of overproduction and consequent slowing up of development it might be wise for major companies to divert a portion of the money which they otherwise would spend in drilling unnecessary wells to the development of the mining methods, so that accurate data would be available concerning this method of recovering oil if extra petroleum should become absolutely necessary as in the event of war.

Several mining processes have been developed and have been described in The Oil and Gas Journal from time to time and the answer to your last question about avoiding old drill holes if mining is practiced will be found in them. Briefly there is no disadvantage in mining in ground that has been previously drilled, and if it is remembered that the area of a 6-inch drilled hole is only about one-sixty-three-millionths of the area of a 10-acre lease it will be seen that the little drill holes will not be in the way of mining drifts or cross-cuts that are large enough for men to move about in.

ANYONE CAN REMOVE A PUMP UNIT FROM THE "LD"—AND WHILE IT IS OPERATING TOO!

• McCORD is the only lubricator on which it is possible to do this. When you install a McCord you can rest assured there will be no more shut-downs for cleaning or adjustment—take a pump unit out any time—the lubricator will continue to operate. Quite important, don't you think? Especially when you start figuring costs. Specify a McCord "Standard of the Oil Fields" on your new compressors and engines or for replacement on present equipment.



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DETROIT MICHIGAN

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)

(Continued from Page 46)

Tarver et al's No. 4 Sabine State Bank, 220 ft. W, 270 ft. N, C, Sec. 26-8-12 ..... Began drlg. Oct. 13; cmtd. 12-in. 79 ft.

C. H. Teat et al's No. 1 Craig, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 25-8-12 ..... Began drlg. Sept. 27; cmtd. 10-in. 97 ft; top marl and cmtd. 6-in. 2,310 ft.

Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 ..... S.D. 2,495 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13 ..... Recmtd. back to 2,392 ft; old T. D. 2,552 ft.

R. L. Gay's No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 18-7-13 ..... Derrick.

UNION PARISH

Bahan & Bahan's No. 2 Tanner, 3,300 ft. N, 1,980 ft. W, SE cor., Sec. 19-22-4 ..... Began drlg. Oct. 13; drlg. 125 ft.

Greenwood Prod. Co.'s No. 5 Norsworthy, 1,320 ft. S, 1,999 ft. E, NW cor., Sec. 9-21-3 ..... Began drlg. Oct. 7; cmtd. 12½-in. 155 ft; 8-in. 850 ft.

Industrial Gas Co.'s No. 5 Grayling Lbr. Co., 660 ft. E, 660 ft. S, NW cor. NE, Sec. 28-21-4 ..... Began drlg. Sept. 25; cmtd. 12-in. 165 ft., 9-in. 867 ft., 6-in. 2,069 ft.

Interstate Nat. Gas Co.'s No. 1 J. M. Edwards, 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-21-3 ..... Cmtd. 6-in. 2,133 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

H. M. Jones Drlg. Co.'s No. 1 Womble, 360 ft. S, 200 ft. E, NW cor. SW, Sec. 1-22-11 ..... Derrick.

Liggett et al's No. 2 Slack, 720 ft. E, 150 ft. N, SW cor. SE SE, Sec. 36-22-11 ..... S.D. 2,618 ft.

Magnolia Pet. Co.'s No. 3 Denman, 369 ft. S, 513 ft. W, NE cor. NE NW, Sec. 1-22-11 ..... Location.

Magnolia Pet. Co.'s No. 2 Gardner, 100 ft. S, 145 ft. W, NE cor. SE NW, Sec. 1-22-11 ..... W.O.S.R. 2,738 ft.

ARKANSAS

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 Hudson et al, 660 ft. N, 545 ft. E, SW cor. SE NE, Sec. 14-10-24 ..... Drlg. 640 ft.

Ark.-La. P. L. Co.'s No. 1 Mattie Kelly, 330 ft. S, 657 ft. E, NW cor. SW SW, Sec. 14-10-24 ..... Drlg. hard sand 2,480 ft.

Conn Grable's No. 1 Hoeing, 720 ft. N, 590 ft. W, SE cor., Sec. 20-9-5 ..... S.D. 2,238 ft.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16 ..... Began drlg. Sept. 24; cmtd. 10-in. 40 ft; S.D.

W. J. Thomas' No. 1 Usserey & Arnold, 200 ft. N, 200 ft. W, SE cor. NW, Sec. 36-15-16 ..... Drlg. 800 ft.

SEBASTIAN COUNTY

Mansfield Gas Co.'s No. 14 Fee, Lot 10, Sec. 1-4-31 ..... Drlg. hard sand 1,550 ft.

Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30 ..... Straightening hole; T.D. 2,640 ft.

Ozark Nat. Gas Co.'s No. 1 Bates, C SE NW, Sec. 28-8-30. Test est. 5,000,000 ft. gas; drlg. 2,990 ft.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 10 Crain, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 1-17-14 ..... Derrick.

Ohio Oil Co.'s No. 4 R. Pumphrey, 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 12-17-14. ..... Cmtd. 6⅝-in. 2,976 ft; 2 ft. sand 2,986 ft.

UNION COUNTY—EL DORADO

Malloy & Co.'s No. 7 Burns, SW cor. NW NW, Sec. 31-17-15 ..... Cmtd. 8¼-in. 2,148 ft.

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Reported abd. 92 ft. Apr. 30, 1930; arranging to resume drlg.

Weisinger & Boll's No. 8 Goodwin, 175 ft. N, 150 ft. E, SW cor. NE NW, Sec. 6-18-15 ..... Derrick.

UNION COUNTY—SMACKOVER

J. E. Crosbie, Inc.'s No. 1 G. L. Murphy, 300 ft. N, 300 ft. W, SE cor. SW NW, Sec. 13-16-16 ..... D.S. test 2,692-2,701 ft., dry; coring 2,725 ft.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Agura, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. ..... Location.

Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur ..... S.D. brown chalk 3,520 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur., in B. C. Jordan Sur ..... Drlg. lime 3,212 ft.

W. G. Banks et al's No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... Location.

S. E. Bell et al's No. 1 Burnett Lbr. Co., C. S. B. Hendricks Sur ..... Cmtd. 8⅝-in. 3,047 ft.

Creighton and Hart's No. 1 Greeny-Kyle, C. Greeny-Kyle 40 ac., Jas. Tippett Sur ..... Base chalk 1,998 ft; D.S. test 2,148-2,223 ft., dry; top Blossom 2,216 ft; drlg. broken lime 2,540 ft.

Knox et al's No. 1 Dunham (was Jackson et al's), 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur ..... S.D; W.O. 2,605 ft. lime.

Nat. Gas Products Co.'s No. 8 Roguemore ..... O.W.D.D; coring sandy lime 4,655 ft.

Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor., Jno. Womack Sur., in B. C. Jordan Sur... Derrick.

MISSISSIPPI

HINDS COUNTY

Lefleur O. & G. Co.'s No. 1 Chadwick-Brown, 550 ft. S, 780 ft. W, NE cor., SW NW, Sec. 11-5-1e ..... Cmtd. 6⅝-in. 2,424 ft.

Cleve Love et al's No. 1 Ridgeway-McGee, 100 ft. W, 500 ft. S, C, Sec. 2-5-1e ..... Tested dry; little S.W. 2,488 ft; arranging to deepen.

RANKIN COUNTY

Millstein O. & G. Corp.'s No. 1 Hartfield, 1,000 ft. W, 62 ft. N, SE cor. NE, sec. 12-5-1e ..... Waiting on string 5 3/16-in. to set inside 6⅝-in. stuck at 2,060 ft; T.D. 2,361 ft.

Dr. S. D. Raymond's No. 1 Graves, 1,810 ft. N, 3,210 ft. W, SE cor., Sec. 12-5-1e ..... Derrick.

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

Company, farm and location— Remarks—

La. Oil Ref. Corp.'s No. 13-B Bodcaw, 330 ft. S, 400 ft. W, NE cor. SE SW, Sec. 11-19-11 ..... D.S. test 1,750-62 and 1,798-1,826 ft. showed gas; coring sandy shale 1,895 ft.

H. I. Morgan's No. 6-B Weatherbee, 200 ft. N, 200 ft. E, SW cor. SE NW, Sec. 32-19-11 ..... Coring lime and shale 1,950 ft.

BOSSIER PARISH—CARTERVILLE

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11 ..... Hole full oil; W.O.S.R.; 15 ft. broken sand. Total depth 3,217 ft.

Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12 ..... Derrick.

The Texas Co.'s No. 1 Pine Woods Lubr. Co., 1,650 ft. S, 300 ft. E, NW cor., Sec. 25-23-12 ..... D.S. test 2,941 ft. dry; drlg. sand showing oil 3,061 ft.

The Texas Co.'s No. 16 Wilkinson, 330 ft. N, 330 ft. E, SW NE, Sec. 36-23-12 ..... Began drlg. Oct. 11; cmtd. 10-in. 188 ft; drlg. 2,185 ft.

Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12 ..... 300 ft. oil in hole; waiting on power; T.D. 3,180 ft.

BOSSIER PARISH—ELM GROVE

R. O. Roy's No. 1 Hunter, 660 ft. N, 660 ft. E, SW cor., Sec. 24-16-11 ..... Drlg. 774 ft.

BOSSIER PARISH—SLIGO

La. G. & F. Co.'s No. 3 Jeter, 4,650 ft. W, 660 ft. S, NE cor., Sec. 24-17-12 ..... Began drlg. Oct. 14; drlg. 257 ft.

La. G. & F. Co.'s No. 3 Jeter, 4,650 ft. W, 660 ft. S, NE cor., Sec. 24-17-12 ..... Cmtd. 9-in. 1,762 ft.

Woodley Pet. Co.'s No. 2 Harris, 247 ft. E, 800 ft. S, NW cor. NE NE, Sec. 14-17-12 ..... Cmtd. 6-in. 1,695 ft.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 ..... Location.

Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,810 ft. S, 970 ft. E, NW cor., Sec. 17-16-16 ..... Location.

Calatex O. & G. Co.'s No. 1 Hudson, 2,395 ft. N, 660 ft. E, SW cor., Sec. 8-16-16 ..... D.S. test 2,980 ft; 3,000,000 ft. gas; cmtd. 6-in. 2,807 ft.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 4 Barr, 350 ft. W, 595 ft. S, NE cor. SE SW, Sec. 30-22-15 ..... Rig up.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16 ..... Location.

The Texas Co.'s No. 74 Levee Board, 1,600 ft. S, 200 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.

The Texas Co.'s No. 75 Levee Board, 2,450 ft. S, 224 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.

CADDO PARISH—PINE ISLAND

Shreveport Oil Corp.'s No. 1-A Muslow, 150 ft. S, 150 ft. E, NW cor., Sec. 32-21-15 ..... Blew out 2,126 ft; estimated 5,000,000 ft. gas, 3,000 bbl. S.W; killed; arranging to set 4½-in.

CLAIBORNE PARISH—SUGAR CREEK

Triangle Drlg. Co.'s No. 1 Brownfield, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 6-19-5 ..... Began drlg. Oct. 8; cmtd. 12½-in. 1,513 ft.

Triangle Drlg. Co.'s No. 1 J. W. Stevenson, 670 ft. N, 665 ft. W, SE cor. SW SE, Sec. 6-19-5 ..... Cmtd. 12½-in. 1,505 ft.

Standard Oil Co.'s No. 4-A Farmer, 330 ft. S, 330 ft. E, NW cor. NE NW, Sec. 5-13-13 ..... Drlg. 2,219 ft.

LA SALLE PARISH—URANIA

Montugu Oil Co.'s No. 9 Zenoria Lbr. Co., 660 ft. W, 200 ft. S, NE cor., Sec. 10-9-1e ..... Location.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 ..... Location.

Grecian Bend Gas Co.'s No. 1 J. D. Sandidge et al, 600 ft. W, 1,980 ft. N, SE cor. NE, Sec. 2-20-4 ..... Location.

Texas-La. Prod. Co.'s (was Moody-Seagraves Gas Co.'s) No. 1 Fisher, 660 ft. E, 3,314 ft. N, SW cor., Sec. 34-21-5 ..... Began drlg. Oct. 8; cmtd. 12½-in. 160 ft., 9-in. 915 ft.

Ouachita Nat. Gas Co.'s No. 2 Cole, 660 ft. S, 613 ft. W, NE cor., Sec. 13-20-4 ..... Began drlg. Oct. 8; cmtd. 12½-in. 154 ft., 9-in. 319 ft.

OUACHITA PARISH

Grecian Bend Gas Co.'s No. 1 Guthrie (no check), Sec. 49-20-4 ..... Began drlg. Sept. 25; cmtd. 13-in. 120 ft; 8-in. 804 ft; 6-in. 2,125 ft.

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 ..... Location.

Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 ..... Derrick.

Pipes & Mack's No. 2 Union Gas Products Co., 295 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5 ..... Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig moved; derrick.

Franklin O. & G. Co.'s No. 1 Thomson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6 ..... Location.

Greenwood Prod. Co.'s No. 1 Boughton, 1,980 ft. E, 660 ft. N, SW cor., Sec. 33-16-6 ..... Drlg. sand 2,324 ft.

Palmer Corp.'s No. 1-B Boykin, 177 ft. S, 787 ft. E, C, Sec. 33-17-6 ..... Began drlg. Oct. 11; cmtd. 12½-in. 161 ft.

Palmer Corp.'s No. 1 Rhymes-Earle, 1,980 ft. S, 1,394 ft. W, NE cor., Sec. 36-17-5 ..... Cmtd. 6-in. 2,300 ft.

Palmer Corp.'s No. 10 Rhymes-England, 1,245 ft. S, 700 ft. W, NE cor., Sec. 7-16-6 ..... Cmtd. 6-in. 2,300 ft.

Palmer Corp.'s No. 12 Rhymes-England, 1,320 ft. W, 660 ft. N, SE cor. NW, Sec. 33-17-6 ..... Location.

Palmer Corp.'s No. 13 Rhymes-England, 561 ft. W, 66 ft. N, SE cor., Sec. 29-17-6 ..... Location.

Southern Carbon Co.'s No. 1 J. A. Clements, 1,320 ft. S, 1,980 ft. W, NE cor., Sec. 10-16-6 ..... Derrick.

Southern Carbon Co.'s No. 1-B Hale, 1,320 ft. N, 660 ft. E, SW cor., Sec. 15-16-6 ..... Location.

Southern Carbon Co.'s No. 1 G. Harris, 10 ft. S, 660 ft. W, NE cor., Sec. 10-16-6 ..... Cmtd. 6-in. 2,285 ft.

Southern Carbon Co.'s No. 1-C Hemler, 1,164 ft. S, 888 ft. W, NE cor., Sec. 14-16-6 ..... Location.

Southern Carbon Co.'s No. 2-C M. L. McCoy, 1,320 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6 ..... Tested dry 2,450 ft; arranging to deepen.

Southern Carbon Co.'s No. 1-D M. and M. McCoy, 1,980 ft. S, 660 ft. W, NE cor., Sec. 30-16-6 ..... Location.

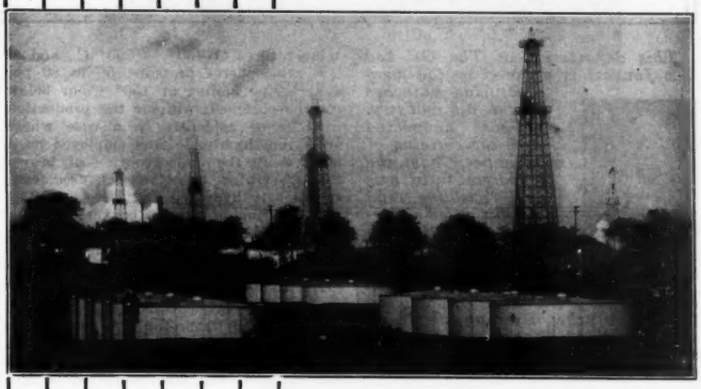
Southern Carbon Co.'s No. 7 F. B. and E. A. Sartor, 2,540 ft. S, 660 ft. E, NW cor., Sec. 17-16-7 ..... Location.

Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 1,400 ft. W, SE cor., Sec. 14-16-6 ..... Began drlg. Oct. 8; cmtd. 12-in. 188 ft.

SUMMARY OF STATEMENTS MADE OCTOBER 10, 1930, OF VARIOUS PIPE LINES FOR MONTH ENDING SEPTEMBER 30, 1930

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	765,612.70	126,408.01	366,424.11	484,508.49	533,002.80
S. W. Pa. P. L.	542,827.03	76,584.80	537,195.66	256,281.87	302,187.13
Eureka P. L.	1,516,135.69	286,627.14	352,306.86	244,918.35	470,322.55
Buckeye P. L. (Macksburg)	665,285.49	335,374.02	81,921.64	216,745.14	225,941.28
Buckeye P. L. (Lima, etc.)	5,065,078.07	93,302.50	2,056,589.59	1,075,693.59	987,068.71
Buckeye P. L. (Cleveland)	66,500.27	11,061.63	166,659.06	1,712.02	175,589.62
Indiana P. L.	759,036.08	5,054.32	2,306,018.12	1,128,187.89	1,260,061.97
Cumberland P. L.	548,890.67	179,527.92	945.50	136,895.24	41,104.84
Southern P. L.	294,744.69	.....	280,625.42	66,892.64	160,810.29
Bradford Trans.	125,354.27	322,922.66	.....	425,829.96	.....
N. Y. Transit	139,813.32	39,583.19	164,206.99	154,725.63	36,842.72
Northern P. L.	480,715.71	.....	463,933.52	124,793.90	260,432.18
Tide Water Pipe	957,099.18	25,675.10	.....	585,647.20	.....
Tuscarora Dev.	276,805.35	.....	.....	360,569.02	.....
Total Sept. 30	12,203,898.52	1,502,621.29	7,266,826.47	5,263,400.94	4,453,364.14
Total Aug. 31	12,378,035.99	1,424,644.58	7,700,758.87	5,887,382.59	4,354,119.27
Difference	174,137.47	77,976.71	433,932.40	623,981.65	99,244.87

Twelve 500-Bbl. low type Maloneys in the Oklahoma City field.



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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D. TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CATALYSTS FOR HYDROGENATION

In some of the articles that I have read about hydrogenation there has been no mention of a catalyst but iron is mentioned in several. Do you know of any special catalysts suitable for this process?—J. R.

Considerable research has been conducted in Germany on the catalysts that appear suitable for the hydrogenation of coal and petroleum residues. The Petroleum Times, September 27, 1930, Page 508, reports a survey by Dr. Ilse Reichenbach, in Die Metallborse, on this subject. The abstract following is from this source:

The catalysts discussed are a few which have been found highly resistant to the action of catalytic poisons. Molybdenum and its compounds, precipitated on pumice or fireclay, or mixed with other catalysts or with indifferent material, are very resistant to the sulphur compounds met with in hydrogenating coals, or which may be present in the hydrogen used. In liquefying coal by the aid of this type of catalyst, the yield of liquid products is increased from 50 to 60 per cent to more than 75 per cent. With a mixture of molybdic acid and zinc oxide as a catalyst, brown coal tar can be converted into a thin liquid product containing about 90 per cent of benzine with a hydrogen pressure of 100 atmospheres and a temperature of 400° C. Similar results are obtained with catalysts that contain combined sulphur. Certain sulphides alone, or mixed with metals or metalloids, are suitable. For example, a dehydrated brown coal tar carried in the form of a fine spray in a current of hydrogen passed over a contact substance formed by compressing precipitated cobalt sulphide, has been found to yield a thin liquid product of which up to 50 per cent is motor bezine. The pressure required is about 200 atmospheres and the temperature ranges from 450° to 500° C. Recently it has been found that molybdenum can be replaced by tungsten and chromium or their compounds with similar results. Tungsten sulphide, tungstic acid, chromium hydroxide, chromic oxide and the chromic acid can be employed. From petroleum residues conducted over tungstic acid in a continuous process at temperatures of 450° to 500° C., and at 200 atmospheres pressure, 50 to 80 per cent bezine boiling at 150° C. or below can be obtained, without the production of coke or asphalt. In a case where chromium hydroxide was employed as a catalyst in the hydrogenation of brown coal generator tar, the gas used contained both hydrogen and nitrogen. The entire volume of tar was converted into a thin liquid saturated product containing no phenol and without leaving any residue. The benzine content was about 50 per cent.

A brown coal dried, except for moisture taken up from the air, was hydrogenated with hydrogen containing 1 per cent ammonia in the presence of a similar catalyst, and was converted to the extent of 80 per cent into liquid. Also a mixture of finely milled brown coal made into a paste with the heavy fraction of a synthetic oil and from 5 to 10 per cent of silicon nitride, was liquefied to the extent of 70 per cent at a hydrogen pressure of 200 atmospheres and a temperature of 460° C.

Interesting results were obtained by catalytic mixtures containing silver, or copper and zinc, or cadmium in small quantities, besides boron, aluminum, silicon, titanium, vanadium, tantalum, chromium, molybdenum, tungsten or cobalt. The working conditions were such that the contact substances were spread on a porous bed of material through which the hydrogen gas was forced while the material to be hydrogenated in a thin layer was kept moving and intimately mixed with the catalyst.

Lately it has been found advantageous to pretreat catalysts by heating them at high temperature with nonreducing gases such as carbon dioxide, sulphur dioxide, nitric oxide, nitrogen, etc. Although change in the chemical composition is not always established, a Rontgen-ray examination discloses physical changes. In a case where the pretreating was with heated sulphur dioxide on a molybdenum-chromium catalyst, a high boiling fraction of an American oil, when hydrogenated, yielded about 80 per cent of benzine with a specific gravity of 0.7, of which about 50 per cent distilled below 100° C. With the same catalyst, but without pretreatment, the result was 70 per cent benzine of 0.76 specific gravity, of which only 25 per cent distilled up to 100° C. A middle oil hydrogenated with a molybdenum-zinc-magnesia catalyst, in which the molybdic acid used had been pretreated, yielded from 80 to 90 per cent of benzine, but only from 50 to 60 per cent with the same catalyst in which the molybdic acid had not been pretreated.

HORSEPOWER HOUR HEAT EQUIVALENT

What is considered to be the heat equivalent for one horsepower hour? What is this in kilowatt hours?—T.D.E.

The early investigations of Joule indicated that one B.t.u. was equivalent to 772 foot pounds, but numerous authorities have determined this value with modern apparatus to be very close to 778 foot pounds. This constant is generally accepted for power calculations.

One horsepower is equivalent to —0.7457 kilowatts; 0.7054 B.t.u. per second; 550 foot pounds per second. These constants may be used in converting to hours.

$$1\ \text{H.P. hr.} = \frac{1{,}980{,}000}{778} = 2{,}545\ \text{B.t.u.}$$

$$1\ \text{K.W. hr.} = \frac{1{,}980{,}000}{778 \times 0.7457} = 3{,}413\ \text{B.t.u.}$$

MARKET FOR PETROLEUM COKE

Have you any recent information showing what uses are made of the coke from refineries?—L. S. J.

E. B. Swanson, in Economic Paper 9, Bureau of Mines, Petroleum Coke, 1930, gives details of the use of petroleum coke as follows: Carbon electrodes; carbon brushes, plates and specialties; electrodes in aluminum industry; abrasives and artificial graphite; calcium carbide; reducing agent ferro-alloys; metallic industries as reducing agent; paints and pigments; gas-making material; ceramic industries; miscellaneous; fuel; orchard heating; exports.

A convenient tabulation was presented by Doctor Dunstan before the Berlin World Power Conference, as follows:

CONSUMPTION PETROLEUM COKE—1928

Use—	Short tons
Fuel by petroleum refineries	550,000
Domestic fuel	220,000
Pulverized fuel, various industries	154,600
Exports	144,100
Electrodes and carbon products	105,200
Gas making and generation electric power	98,400
Lead and zinc smelters	25,800
Pigments, carbides, lime, etc.	19,600
Experiments and miscl. heating	6,500

The consumption of petroleum coke by refineries is increasing and very few modern refineries are without special pulverizing equipment for reducing the coke to convenient form for burning under boilers and stills. It will be noted that over 40 per cent is reported in this table as consumed by refineries as fuel. In some plants the pulverized coke is mixed with coal, low-grade fuel oil, acid sludge and general refuse.

OCTANE NUMBER OF GASOLINE

Will you please explain briefly the theory and method for determining the octane number of gasoline?—E. H.

Numerous suggestions have been offered for a standard that will serve to measure and indicate the antiknock value of motor fuel. Some several years ago Dr. Graham Edgar proposed the use of a standard fuel which could serve for comparison with other fuels; that is, a basic primary standard which will always be reproducible, give concordant results, and by means of which one laboratory may compare their results with those obtained by others. His investigations indicated that a mixture of pure hydrocarbons of almost identical properties, with the exception of the tendency to cause knocking, was suitable for this purpose. These are normal heptane and iso-octane. The normal heptane may be obtained in a high state of purity from the Jeffrey pine oil. The Jeffrey pine grows in California and quite generally along the Pacific Coast. Heptane boils at 209.1° F., specific gravity 0.73315, or 61.5° A.P.I., and is one of the constituents of ordinary gasoline. Its distinguishing characteristic is that it is an extremely bad knocker, far worse than any gasoline which can be used in any automotive engine of the present time.

The second hydrocarbon, octane, has a boiling point of 210.7° F., and closely approaches heptane in other properties. However, it is practically free from the knocking tendency; so it is possible to prepare mixtures of these two hydrocarbons in various proportions to duplicate the degree of knocking found in any motor fuel.

It was suggested at the May, 1930, meeting of the Society of Automotive Engineers that the confusion now existing with respect to knock rating could be corrected by the adoption of heptane and iso-octane standard mixtures as the reference fuel. The first proposal was one in which the components would be stated on a percentage basis but this would be cumbersome. All commercial gasolines may be graded for knock on the basis of the octane content, or octane numbers from slightly below 10 to about 30. The final recommendation involved the use of whole numbers. The octane number being defined as the number of parts of iso-octane added to 10 parts of normal heptane.

BARRELS OF OIL PER TON

When reading some reports of operations in foreign fields I find the production, etc., given in tons. Can you refer me to any tables showing the different gravities of crude oil in tons and barrels?—H. M. W.

Many countries where petroleum is produced have adopted the metric system of weights and measures; therefore, reports from these countries frequently express weights and volumes either in pure metric terms or some modification of the metric units is used. The metric ton, which is often mentioned, is 1,000 kilograms or 2,204.62 pounds avoirdupois. As used in Egypt and Peru a metric ton of petroleum is equivalent to 7.5 United States barrels of 42 gallons; in Italy, it is equivalent to 7.1095 United States barrels, and 7.19 barrels in Rumania.

The common conversion value, used for approximate equivalent, is 7.5 bbls. of petroleum represents 1 ton. When more accurate values are required it is of course necessary to know the specific gravity of the oil so that the exact weight may be calculated by the use of the standard constants.

The specific gravity of liquids is an expression of weight compared with an equal quantity of water under identical conditions. If a few weights for volumes of water are remembered it is not difficult to calculate the weight of any volume of a liquid when the specific gravity is known. The density of petroleum and petroleum products is usually found by means of a hydrometer and the density stated in degrees A.P.I. This is a modification of the Baume system for liquids lighter than water, and A.P.I. represents the American Petroleum Institute, the society which proposed the adoption of the system as the standard for use in the petroleum industry in the United States. Tables have been prepared showing the equivalents in specific gravity or the specific gravity may be calculated from the A.P.I. gravity by the formula:

$$\text{Specific gravity} = \frac{141.5}{131.5 + \text{A.P.I. degrees}}$$

Space is not available here for a complete table showing the relative values for the different grades of petroleum so the outline following has been prepared and additional data may be calculated and inserted as desired. It will be found convenient to remember that the weight of one gallon of water is 8.3 pounds, and that one cubic foot of water weighs 62.2994 pounds at 60° F., or 62.3 pounds approximately.

GRAVITY AND WEIGHT OF PETROLEUM

°A.P.I.	Specific grav.	Lbs./gal.	Lbs./bbl.	Bbls./ long ton
20	0.9340	7.778	326.676	6.85
25	0.9042	7.529	316.218	7.08
30	0.8762	7.296	306.532	7.37
35	0.8498	7.076	297.192	7.54
40	0.8251	6.870	288.540	7.76
45	0.8017	6.675	280.350	7.99
50	0.7796	6.490	272.580	8.22
55	0.7587	6.316	265.272	8.44
60	0.7389	6.151	258.242	8.67

Note.—The U.S. gallon, 231 cubic inches, of water weighs 8.328 pounds.

The long ton is 2,240 pounds and the metric ton is 2,204.62 pounds. The fundamental data are from United States Bureau of Standards Circular 154, 1924.

CURTAILMENT CONTROL IN CALIFORNIA FIELDS

(Continued from Page 33)

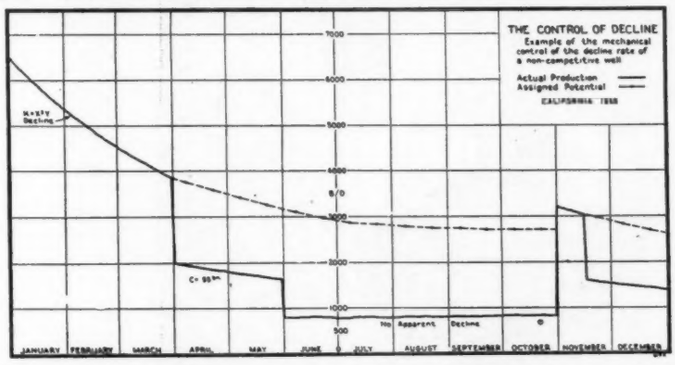
fields but within a given field all operators are expected to take the same amount of curtailment except in a few special cases.

After the allotted production of any given lease is determined, such allotment is credited with previous underproduction or debited with previous overproduction. This corrected allotment becomes the allowable production of the lease for the period and is the figure with which actual production is compared in determining overproduction or underproduction, and it is also the amount of oil which is certified to the pipe line company as being eligible for purchase. The following rules relating to allotments and allowable production are given:

D.-1. Basis of allotment—The lease shall be the effective unit of proration and production allotment. The community lease or a group of pooled leases under one ownership or management may be considered as one lease if the interests of adjacent operators are not thereby prejudiced.

D.-2. The allotment—The production allotment for any lease shall be that assigned portion or percentage of the potential production which the lease may ratably produce. The allotment is determined by multiplying the potential by the applicable percentage.

E.-1. Definition of allowable—The allowable production of any lease for any



period shall be the allotment for the period adjusted for prior excesses or shortages.

First Measure of Control

Naturally, any system of proration requires constant control if it is to last. The first measure of control is the determination of the performance of individual producers. Oil produced and sold or held for sale is determined from monthly statements of pipe line runs and field stocks. These are furnished by the purchasing companies as well as the producer and furnish an absolute statement of marketable production, which is the basis of judging an operator's curtailment.

However, these monthly statements are too infrequent and too long delayed to furnish prompt information regarding the production of various fields. It is necessary, therefore, to require daily production reports from each operator in all the important fields of the State. In this manner a very close daily estimate of the State's production is obtained and it is this daily figure which enables the industry and the public to know the day-by-day status of the curtailment program, and it also permits the immediate exposure and prompt remedy of infractions.

Preliminary statements of an operator's monthly production are made on the basis of the daily production reports, but these statements are always corrected by comparison with the oil inventories as shown by shipments and stocks.

Limitation of Potentials

Because of the constantly mounting potential of the State, due to the development of new fields and the revival of old fields, and also to the surprisingly slow decline in potential of severely curtailed fields, it became necessary on August 1 for the general committee to reaffirm and insist on the enforcement of a theretofore unapplied ruling which had been made as of May 15.

The intention of the rule was to discourage drilling and the development of new production. Simply expressed, this rule prohibits new wells from participating in the effective potential and in the allotted production of the State until old wells have declined an equivalent amount. In practice, the effective potential and allotment of every lease and field in the State is fixed at an amount which is subject to decline as it occurs, but which is eligible to increase after the development of a greater actual potential only by prorata participation in the decline of other units.

This rule has been effective since August 1 and has been only partially successful. In some fields it has been very effective and in others it has been rather difficult of enforcement. An illustration of its application may be seen in the Elwood Field which had a potential of 79,380 bbls. daily and an allotment of 41,355 bbls. daily for the August 1-15 period. For the August 16-31 period the actual potential had increased to 104,160 bbls. daily, but the effective potential had increased only by a 995-bbl. daily share of other fields' decline. The effective potential was only 80,375 bbls. daily and the allotment was 41,955 bbls. daily. Thus the bringing in of 24,780 bbls. daily of new potential added only 600 bbls. daily to the allotment of the field and there would have been no increase in the allotment had it not been for a decline in other fields of Group 1.

Maintaining the Status Quo

Obviously enough, the strict enforcement of this rule will tend to maintain the status quo of fields and will very strongly discourage the development of new fields that can obtain a place in the group only by the decline of old fields. Within fields a certain flexibility of application has been provided so that wells on new leases are not unduly penalized.

This rule has been both praised and condemned according to the viewpoint of the observer. While it represents an important innovation in control, it is certainly one of the logical steps which the oil industry must take as it advances toward the goal of stabilization and self-control. It tends to discourage unnecessary expenditures for drilling wells that cannot be produced until the oil is needed—and at the same time protects the declining field from being further curtailed to make room for new flush production. The operator who does not drill is thus protected against the excessive drilling of the one who does.

Engineering Control of Proration

The original establishment and the frequent revisions of potentials for practically every well and lease in the State of California was a task of such magnitude that mass production methods had to be adapted to the accepted technical practice of estimating potentials. It became necessary to estimate future potentials of a well or lease with unbiased accuracy, for the amount of an operator's income depends on the potential assigned him.

As previously indicated, the initial flow test of a well is often the only fact which

(Continued on Page 96)

Pomona Turbine Pumps are readily adapted to any prime mover. Photo at right shows a Murray Vertical Steam Turbine mounted on Pomona pump head.

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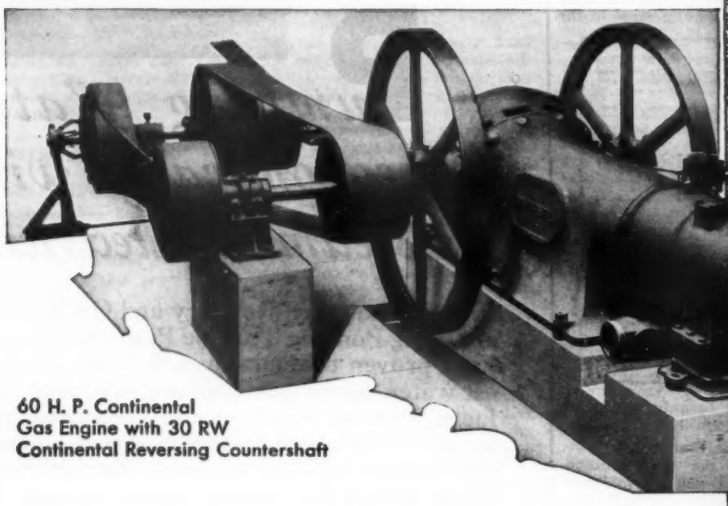

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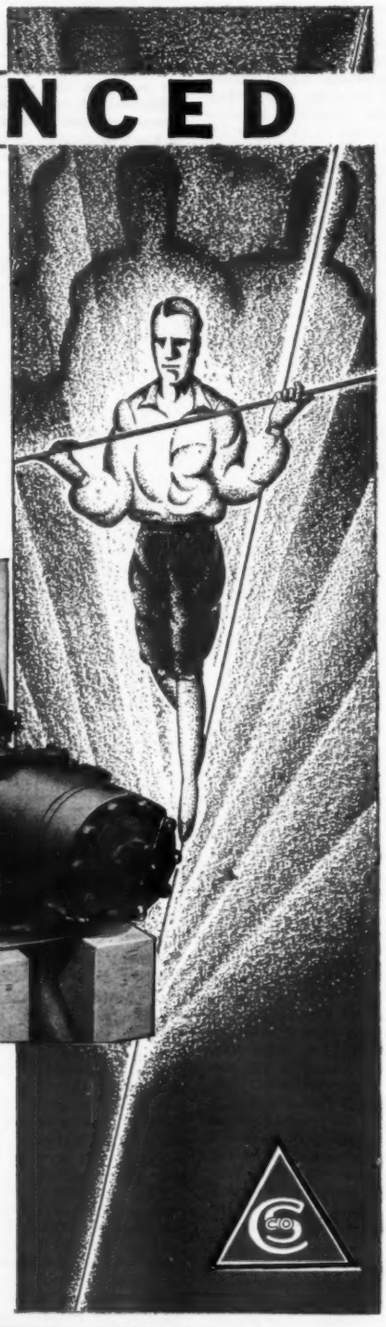
Gas Engine with 30 RW
Continental Reversing Countershaft



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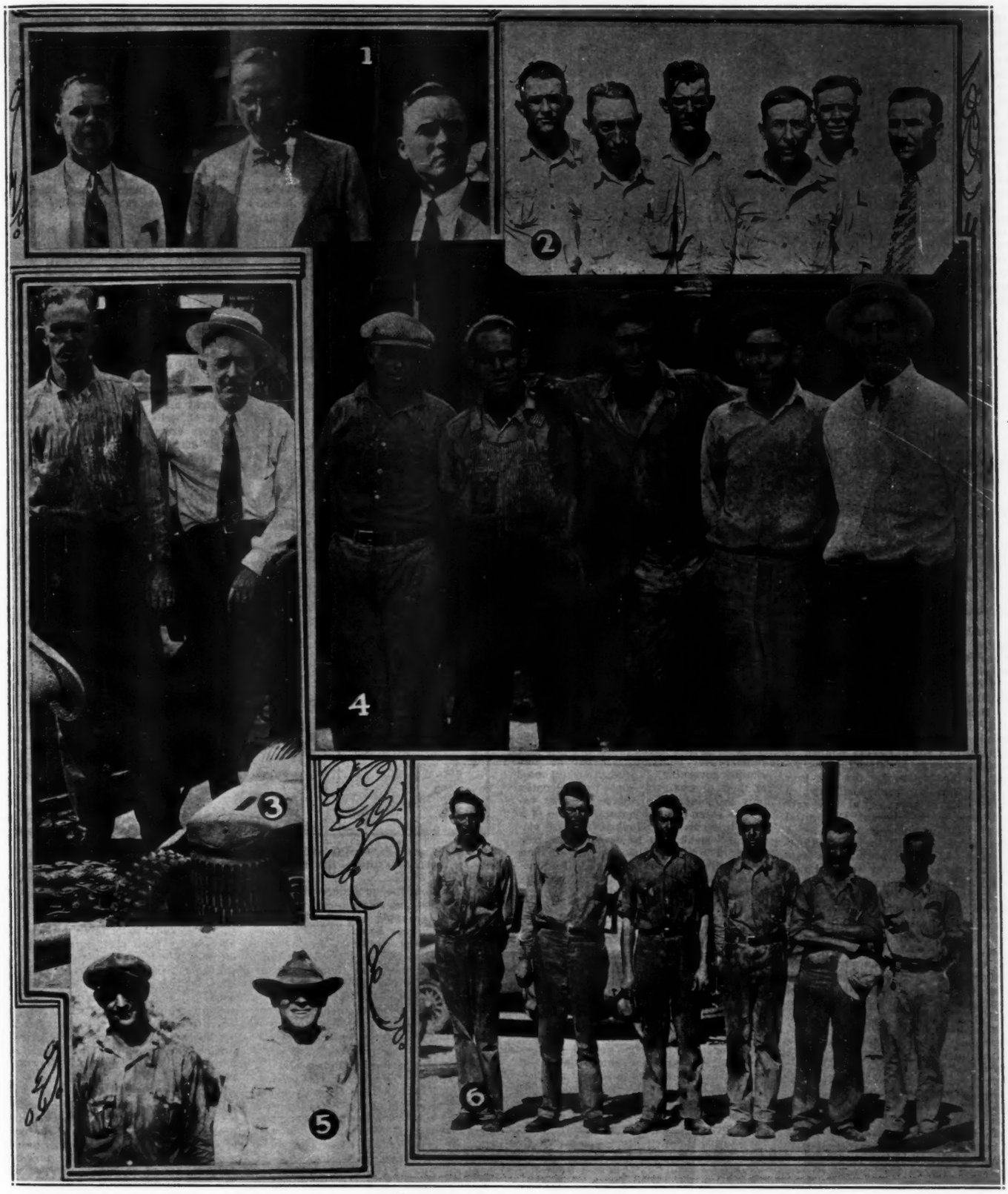
CONTINENTAL

Men Who Are Active in the Different Oil Fields

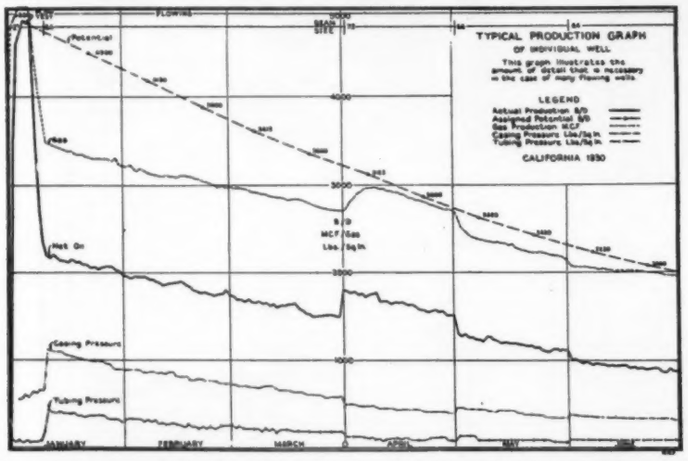


1—Dr. A. Wade Schwitalla, manager crude oil department; U. deB. Daly, president; and W. Gould, assistant to the president, Shell Petroleum Corp. 2—Left to right: John Clemens, Halliburton Oil Well Cementing Co., Gulf Coast district; C. H. Lee, production superintendent; W. B. Issaks, assistant general superintendent of production and superintendent of drilling; R. Pattison, tool pusher; J. J. Fields, connection superintendent, Humphreys Corp., Barbers Hill Field; and C. C. Bishop, land department, Humphreys Corp., Houston, Tex. 3—C. R. Si Perkins, driller; N. W. Pannill, superintendent of drilling, Government Petroleum Corp., Oklahoma City. 4—C. F. Davenport, operator; Hank Rains, repairman; V. C. Towner, pump repairman; G. H. Hack, still foreman, and J. A. Bellers, superintendent cracking plant, Beckett Co., Inc., Beckett, Okla. 5—J. J. Veach and T. V. Gilmore, drillers, Graham, Tex. 6—D. L. Province, transportation department; C. Kidd, roustabout; Charles Walker and Roy Middleton, electricians; J. G. Voelm, superintendent water and lights; and J. M. Renfro, gauger, Ohio Oil Co., Hobbs, N. Mex.

can be definitely established during the entire flowing life of a well under curtailment. There is no period of normal decline and there is no normal decline in nearby wells which might be used for comparison. Experience soon proved that family decline curves were seldom of value and generally quite worthless for estimating well potentials in a curtailed field.

For sometime after the beginning of curtailment, potentials of individual wells were estimated by projecting the past decline curves. The famous February flow test proved that greater consideration had to be given to the present conditions of wells than to past history.

During the flow tests, it developed that the potential of the Elwood and Ventura Avenue Fields had been greatly underestimated while the potentials of Santa Fe Springs and Long Beach had been considerably over-rated. The vast differences in the development methods of these fields accounted for the errors in potential. In effect, the decline of the deep zone wells at Santa Fe Springs had



been much more rapid than the early history of the first wells would indicate. As a matter of fact, it could be seen that in certain areas of the field the completion of every additional well accelerated the decline of earlier wells.

Determination of Potentials

As previously mentioned, the initial potential of a new well, or of a well which has had some radical change in production methods, is determined by averaging the production for the last four days of a five-day test, during which time the well is produced at any rate deemed safe by the owner. The initial potential thus established serves as a basis of proration until the next adjustment when the initial potential is subjected to some apparent or assumed rate of decline. The subsequent estimation of the potential of such a well is discussed in succeeding paragraphs.

It was soon discovered that if satisfactory production records were to be kept and if potentials were to be estimated with any degree of accuracy, production graphs for all leases and for all large or recently completed wells would have to be prepared and maintained. The original construction of these graphs and their constant maintenance involves a lot of work but the results obtained have more than justified the adoption of graphical records of production.

No data appear on a production graph that can reasonably be omitted. Thus the production graphs of some leases are very simple but the graph of a large well may of necessity be quite complete. Extreme examples of different types of production graphs are herewith presented.

With past history and family curves both proven unreliable in the estimation of potentials, it became necessary to devise some more accurate means of estimating the potential of wells having an irregular history. Any such method had to be based upon the initial flow test in some way, as that was the one definite fact which needed no interpretation. Unfortunately, the initial flow test potential, while established accurately enough, was often conducted under conditions of flow which would not long persist, and in such a manner that continued production would neither be wise nor safe.

Classification of Wells

Thus the problem of estimating the potential of wells that had been producing under severe curtailment for several months was a real one. The first step was to establish a classification under which wells and leases could be arranged approximately in order of the difficulty encountered in estimating their future potentials. As a result of this classification it was found that about 80 per cent of all wells considered offered little or no difficulty. These were wells which showed such graphical regularity of production that their respective potentials could be calculated with a close degree of accuracy at least three months in advance. The remaining 20 per cent of the wells considered involved more consideration and work than did the 80 per cent, and the estimates obtained were much less accurate.

As is well known, it is mathematically possible to resolve the normal decline curve of a well into several empirical formulas representing as many different types of natural curves, of which those representing the so-called hyperbolic and exponential type are the most common, although there are others equally accurate but somewhat more cumbersome of application. Some of these curves have a partial reason for being used because they reflect some of the natural mechanics governing oil production but most of them approximate some natural curve only by coincidence. Since so many variables enter into the natural decline of a well it seems very doubtful if any empirical formula can be developed to represent a well's decline for longer than the limited periods during which mechanical and underground conditions remain practically unaltered.

Simplified Formula

Since accurate short-time estimates were required rather than long-time approximations, it became necessary to select some formula that could be readily applied and with very little calculation. Obviously enough the simplified exponential formula represents the most practicable one available for the 80 per cent majority of the wells considered. The operation of the exponential formula requires only the average normal production of two periods of any convenient length from a few days to several months. The same results may be obtained by the use of several different formulas which may be made as complicated as desired, but which are here given in their simplest form:

$$c = \frac{b}{f} \qquad \left(f = \frac{a}{b} = \frac{1}{r}\right)$$

$$c = \frac{b^2}{a} \qquad \left(r = \frac{b}{a} = \frac{1}{f}\right)$$

$$C = b.r^n$$

Where C = required potential or the estimated daily average for next period, b = average daily production of present period, a = average daily production of previous period, f = decremental factor.

In this instance successive equal intervals of average production are assumed but intermittent periods of unequal length are easily used by making appropriate modifications of the above formula. This formula can be developed into a formula for calculating the recoverable oil remaining as of any given time.

$$\text{Future production} = \frac{d(a - s)}{1 - r}$$

Where d = number of days in periods used, s = minimum commercial daily production, a and r = above.

Thus a well showing an average production of 150 bbls. daily during January and a normal average of 125 bbls. daily for June might be expected to average 120.5 bbls. daily during July according to the brief calculation:

July potential is equal to

$$\frac{125}{\sqrt[6]{\frac{150}{125}}} = \frac{125}{\sqrt[6]{1.2}} = \frac{125}{1.037} = 120.5\text{B/D}$$

Assuming that 10 bbls. daily is the minimum commercial production of the well the recoverable oil remaining as of June 1 would be:

$$\frac{30(125 - 10)}{\left(1 - \frac{1}{1.037}\right)} = \frac{30(125 - 10)}{(1 - .96423)} = \frac{3{,}450}{.03577}$$

$$= 96{,}450 \text{ bbls.}$$

The expected life of the well after June 1 would be 70 months or nearly six years. The total life and total ultimate production expected from the well may be obtained by adding past life and production to estimated future life and production.

In applying the procedure here outlined it must be remembered that the formulas given apply only to settled production which may be considered as coming from wells showing an average monthly decline of less than 5 per cent. In practice it has been found that the ultimate production as estimated was consistently a trifle lower than the ultimate obtained, although theoretical considerations indicate that the actual production might slightly exceed the estimates.

Principles Governing Potentials

As a result of analyzing the production graphs of hundreds of wells under every conceivable kind of control and with every degree of curtailment several principles governing the establishment of well potentials were developed. The more important of these principles may be mentioned.

1. The decline of a flowing well free from serious interference is a function of the differential pressure (that is, difference between effective formation pressure and the back pressure) and is subject to variation within wide limits by mechanical control.

2. The potential production of a well at any time and under uniform physical conditions depends upon its total past production as compared with its ultimate production rather than upon the rate of past production.

The meaning of the first principle is that within wide limits the producer may govern the rate of decline of his well by mechanical manipulation. The second principle says that the potential production of a well which has produced a certain amount of oil under curtailed conditions in a given time is the same as if the well had produced the same amount of oil under normal conditions and in a much shorter time. This may be considered as a corollary to the law of equal expectations.

An additional principle which appears to be true but is not yet proved is that:

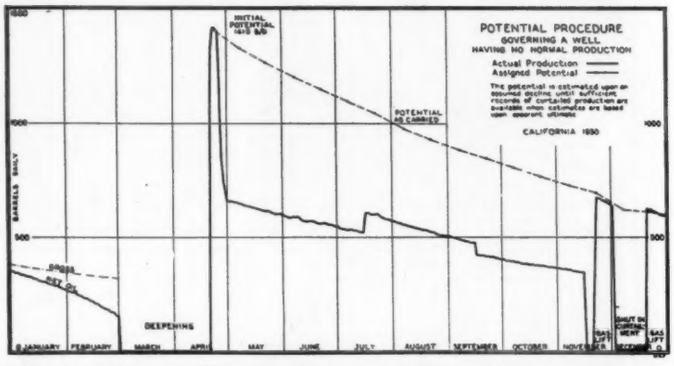
3. The ultimate production of a well having little or no competition may be considerably increased by limiting the well to a low rate of decline during its flowing life.

This principle is clearly indicated at present but it is too soon to say when edge water encroachment will terminate the production from several wells under observation.

Isolated Wells

In practice it was found that the second principle could be applied only to isolated wells because well interference in a closely drilled field is so serious that any well may easily lose a large proportion of its original ultimate production to competing wells. It was noted that in a great many cases the potential production of wells in competition declined at almost exactly the same rate at which their actual curtailed production declined. Thus a well with a potential of 1,000 bbls. daily and with a monthly decline of 10 per cent under curtailment would be given the same percentage decline in potential. This was found to be true in so many cases that the principle was applied to all wells except those obviously irregular.

The method of estimating and the assignment of potentials to wells under widely different conditions is illustrated in the accompanying graphs. The variable performance of the wells under curtailment is also shown. One feature worthy of note is that the usual method of curtailing gas-lift wells is to produce them at capacity until their total monthly allowable production is obtained and then shut them in for the balance of the month. This is because the daily allowable is usually far less than the minimum amount which the well will produce by gas lift. Frequently also a potential is established on gas lift, but the allowable production based on such a potential may be obtained by natural flow or by pumping.



Gas-Oil Ratio

The gas-oil ratio of a flowing well has a considerable bearing on the curtailment problem of that well. One of the results of the curtailment program has been the concerted effort of many operators to reduce the gas-oil ratios of curtailed wells. The common tendency of flowing wells to increase their gas-oil ratio if left undisturbed for some time is well known. It is difficult to avoid this increase in the gas-oil ratio except by careful and frequent adjustment of mechanical conditions and by severe curtailment during the early life of the well.

It is apparent that this increase in the gas-oil ratio is due to the removal of

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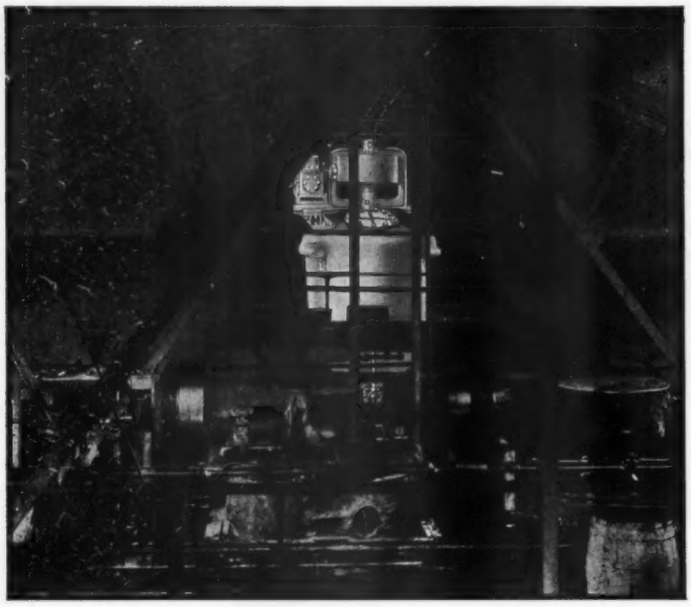

Photo of a recent installation of 300-gal. Dopp Style "D" Double Motion Pressure Mixer, lagged to save steam, in connection with open mixers that were already in service. Direct motor drive through speed reduction unit in this case eliminated the necessity for additional shafting or belts. Can also be furnished for chain or belt drive, as preferred.

FOR BETTER GREASE

an improved and uniform product nearly always results from the use of specialized grease equipment.

AMONG many large grease manufacturers, scientific study and analysis of production problems are resulting in modernization of grease plant equipment. The development of specialties is imposing more rigid requirements of quality and uniformity than can be met by older types of kettles and mixers.

With these demands for improved quality have come other demands for more efficient operation. Tying up large grease kettles for "one-batch-per-day" production is no longer considered necessary, when with pressure saponification the addition of one small pressure mixer per pair of open kettles provides practically doubled capacity, and an improved product besides.

Dopp Pressure Mixers and open Kettles make possible many grease manufacturing economies, not to be had with ordinary equipment. More efficient mixing with the Style "D" double-motion agitator enables more oil to be worked into the soap in less time. Alternate quick heating and cooling in the same kettle cuts down the time required per batch. Dopp seamless jacketed construction reduces the possibility of steam leaks to a minimum, permitting accurate moisture control. Spring steel scraping blades on the agitator actually *scrape* the kettle surface clean at each revolution—no accumulated material is left, requiring mixer or kettle to be shut down for periodic cleaning.

Circular 63, the first of a series of technical discussions on grease manufacture, more fully describes these and other operating economies. A copy will be sent you on request.

Experimental Department. If you are interested in possibilities of improved or more uniform product at lower cost or in the development of new specialties, we shall be glad to have you avail yourself of our experimental facilities at Buffalo. No charge or obligation. Write for details or appointment.

Cross-section of Dopp Seamless Jacketed Grease Kettle, showing cast-in-one-piece, seamless construction; also Style "D" Double Motion Agitator with scraping blades that actually *scrape* the kettle surface at each revolution.

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fluid from the well faster than it can flow through the sand to the well. This results in an area of local impoverishment surrounding the well with the pressure gradient increasing rapidly in all directions away from the well. The farther gas has to travel to enter a well the less oil comes with it. This is because of the higher mobility of gas, together with its tendency toward bypassing and slippage in the formation.

Obviously, the solution of this problem is to maintain a low pressure gradient in the formation and thereby hold the drainage area in near equilibrium. In theory, oil should be removed from fields under hydraulic control only as fast as edge water can encroach to take its place. Unfortunately, we know so little about the source, effect and rate of movement of edge water that we cannot base our production upon it. Particularly should we know more about the components of edge water pressure. How much of the pressure is due to hydrostatic head; how much to rock pressure and how much to gas accumulation. Its rate of movement depends upon the effective pressure and upon formation friction and also upon its source.

Rate of Production

Unable to use edge water encroachment as an index for our rate of production, we are forced to cast about in search of some arbitrary standard to guide us. In this search we may consider that it is our purpose to derive the maximum practicable amount of work from all gas originally present in the reservoir. Conditions vary so much between fields and between wells in a field that it is difficult to make a statement as to what constitutes efficient gas utilization. However, a few generalizations may be made as follows:

1. The gas-oil ratio of an individual well should not exceed the average ratio of the zone or field. Wells exceeding this average should be adjusted or shut in completely if not subject to improvement.

2. Production should be obtained by the most efficient mechanical means. Thus a well may be flowed through the casing at one stage of its life and through tubing at another stage, or control may be entirely by tubing depth, tapered tubing or bottom hole beans. Except for curtailment purposes there should be no back pressure on properly tapered tubing or on tubing having the correct bottom bean. High-pressure gas from wells in one zone has been taken directly from the trap to flow wells in zones requiring gas lift.

3. The decline curve of a well should not be allowed to become of the power function or hyperbolic type for such a curve in a field under hydraulic control indicates that gas is doing more work than is necessary.

If hydraulic control is lacking or negligible, the decline curve should be not less than isothermal in type, which is a power function curve of the formula $k = x^1y$ in which the product of the production and the time element is always constant. The value of ^{n} in the formula $x^ny = k$ should be kept as high as possible. However, in all possible cases, a curve showing a constant percentage of decline with a low rate is preferable to curves which indicate inefficient utilization of gas.

It is not always easy to recognize the type of natural curve represented by a well's decline, so the following directions may be found useful.

Given: The average daily production of three successive equal intervals of flow under normal conditions.

Required: To determine the type of curve represented by the well's decline.

Procedure: Substitute known values for a and c in the following equations and solve for b.

$$(1)\quad b = \frac{a+c}{2} = \begin{cases}\text{Arithmetic decline.}\\ \text{Constant decrement decline.}\end{cases}$$

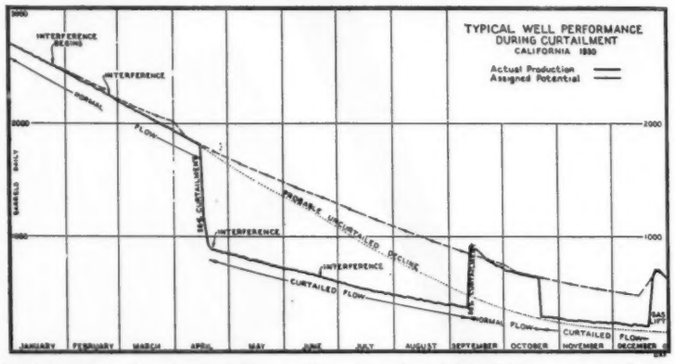
$$(2)\quad b = \sqrt{ac} = \begin{cases}\text{Geometric decline.}\\ \text{Constant rate decline.}\\ \text{Exponential decline.}\end{cases}$$

$$(3)\quad b = \frac{2ac}{a+c} = \begin{cases}\text{Harmonic decline.}\\ \text{Isothermal decline.}\end{cases}$$

$$(4)\quad b = \frac{a+c}{(a+c) - \frac{(2ac)}{a+c}} \begin{cases}\text{Basic decline.}\\ \text{Fractional power. decline.}\end{cases}$$

Result: The decline curve of the well may be considered as being of the type named with the equation giving a calculated value for b most nearly equal to the actual value.

Ninety per cent of all well decline curves fall between types 2 and 3 and may be considered either as power function curves with high "n" values or as double exponent curves. It is between types 2 and 3, and between types 3 and 4 that many other empirical equations may be developed. For the greatest flowing production as well as for the largest commercial ultimate the decline curve of a well should be held closely to the geometric decline type of curve.



It is interesting to note that those fields where conditions most nearly approach those of unit operation are the fields that have had the fewest curtailment difficulties and are the least affected by curtailment. It follows, of course, that the periodic need of balancing production against demand is another argument in favor of unit operation which provides the easiest and most efficient method of bringing about such a balance.

Future of Curtailment

The oil industry has now demonstrated that, although it is impossible to increase demand as rapidly as the supply is often increased, it is possible to co-operatively adjust the supply to the demand by means of proration. Other industries are even now following the same course and it seems probable that the time will soon come when huge stocks of surplus commodities will be unknown because they will not be created in excess of normal needs.

The prosperity of the 80,000 employes of and the 500,000 investors in the California oil industry is so dependent upon stable conditions of production and price that it now seems probable that oil curtailment in some form will continue until storage oil is reduced by half and until the normal production of the State closely approximates current demand.

Aside from its economic value, curtailment has given us a better knowledge of some of the factors affecting the production of oil and the management of oil fields. Some of these have been briefly touched upon in this paper, others must

await further investigation. Unfortunately, as is the case with many other advances, the full effect of more efficient production methods can be realized only under ideal conditions of development and such ideal conditions are entirely too rare. It seems possible, however, that the growing spirit of co-operation among oil producers as manifested by the success of voluntary proration may eventually lead to the co-operative development and production of oil fields on such an efficient basis that restricted production will become the rule rather than a necessity.

Acknowledgement is hereby made of the valuable suggestions and assistance received from Josesph Jensen, D. R. Roberts, F. A. Graser and M. R. Peterson in the preparation of this paper.

GASOLINE TANK WAGON PRICES ARE LOWEST SINCE DECEMBER 1, 1927

The average net gasoline tank wagon price in The Oil and Gas Journal's 50 cities on October 1 was 14.25 cents, slightly lower than it has been any time this year and lower than at any period since December 1, 1927. The decline in the average has been consistent since May 1 of this year and has come about despite the seasonal increase in consumption which took place with the approach of the summer and fall months.

Price cutting took place in many of the principal cities early in the year, partly as a result of a move on the part of a few marketers to increase their gallonage and then was aggravated by the increasing number of railroad siding service stations, where prices were maintained from 2 to 3 cents below the general market. The wide difference between the posted service station price and the refinery wholesale price encouraged price cutting and it became evident as fall approached that it would be difficult to avert a general reduction.

General reductions were made during the latter half of September, the Standard Oil Co. of New Jersey posting a general reduction of 2 cents September 24 and the Standard Oil Co. of Indiana posting a similar reduction September 29. Other companies reduced their schedules in this period. Because these general reductions were concentrated at the end of September, the October 1 average would be expected to be considerably below the previous month's average. This is not shown in the table, however, for the reason the average is derived from prices existing in the larger cities and, as stated previously, these larger cities witnessed price wars and price cutting earlier in the year and in many cases the prices posted in these cities had already discounted the pending general reduction.

AVERAGE TANK WAGON PRICES IN 50 CITIES

Gasoline
(Exclusive of tax)

January 1, 1928	14.29
February 1	14.33
March 1	14.71
April 1	14.81
May 1	15.02
June 1	15.22
July 1	15.29
August 1	15.74
September 1	16.04
October 1	16.34
November 1	16.28
December 1	15.98
January 1, 1929	16.00
February 1	15.11
March 1	14.73
April 1	14.90
May 1	14.94
June 1	15.80
July 1	16.02
August 1	15.82
September 1	15.74
October 1	16.00
November 1	15.82
December 1	15.59
January 1, 1930	15.45
February 1	15.36
March 1	14.54
April 1	14.26
May 1	15.27
June 1	15.25
July 1	14.82
August 1	14.77
September 1	14.58
October 1	14.25

TANK WAGON PRICES EXCLUSIVE OF TAX IN 50 REPRESENTATIVE CITIES

City—	Prices July 1	Price changes July 1-Oct. 1					Prices Oct. 1	High and low 1929		High and low 1928		Tax Oct. 1 1930
Birmingham, Ala.	15.0	7/10 13.0	....	8/2 12.0	9/22 14.0	....	13.0	18.0	13.0	18.0	14.0	4.0
Phoenix, Ariz.	13.0	....	....	....	....	....	13.0	14.0	14.0	18.0	14.0	4.0
Little Rock, Ark.	12.0	....	....	....	9/3 10.0	9/23 11.5	11.5	15.0	12.0	16.0	11.0	5.0
San Francisco, Calif.	15.5	7/4 16.0	....	....	9/15 20.0	....	20.0	17.0	12.0	14.0	14.0	3.0
Denver, Colo.	12.0	....	....	....	....	....	12.0	15.0	11.0	16.0	13.0	4.0
Hartford, Conn.	15.5	....	....	....	....	....	15.5	18.0	16.0	18.0	16.0	2.0
Dover, Del.	16.0	....	....	....	....	10/1 15.0	15.0	17.0	15.0	18.0	16.0	3.0
Jacksonville, Fla.‡	15.0	7/2 14.0	7/30 13.0	....	....	....	13.0	18.0	16.0	18.0	13.0	6.0
Atlanta, Ga.‡	15.0	7/10 13.0	....	....	9/22 15.0	....	15.0	18.0	14.0	18.0	13.0	6.0
Boise, Idaho	18.5	....	....	....	....	....	18.5	20.5	17.5	20.5	19.5	5.0
Peoria, Ill.	15.2	..	....	....	....	....	13.4	16.2	14.2	15.2	9.0	3.0
Chicago, Ill.	15.0	....	....	....	9/29 13.0	....	13.0	16.0	14.0	15.0	14.0	3.0
Indianapolis, Ind.	15.2	....	....	....	9/2 13.9	....	13.9	16.2	14.2	15.2	10.2	4.0
Des Moines, Iowa	15.5	....	....	8/30 12.5	....	....	12.5	16.5	14.5	15.5	11.9	3.0
Wichita, Kans.	13.8	....	....	....	....	....	13.8	14.8	12.8	13.8	10.8	3.0
Louisville, Ky.	13.0	....	....	....	....	....	13.0	16.0	15.0	16.0	13.0	5.0
New Orleans, La.	9.5	....	....	8/23 8.5	9/23 11.5	....	11.5	13.5	10.0	14.5	10.5	5.0
Augusta, Me.	15.8	....	....	....	....	....	15.8	17.0	16.0	18.0	17.0	4.0
Baltimore, Md.	13.2	....	....	....	9/24 11.2	....	11.2	16.0	14.0	16.0	15.0	4.0
Springfield, Mass.	15.5	....	....	....	....	....	15.5	18.0	16.0	18.0	16.0	2.0
Detroit, Mich.	15.8	....	....	....	9/13 13.8	....	13.8	16.8	14.8	15.8	11.8	3.0
Duluth, Minn.	16.5	..	....	....	9/29 14.5	....	14.5	17.5	15.5	16.5	12.5	3.0
Natchez, Miss.	14.5	7/10 14.0	....	....	....	....	14.0	16.5	14.0	16.5	12.5	5.0
Kansas City, Mo.	14.9	....	....	....	9/29 12.9	.... 10/1	12.9	15.9	13.9	14.9	10.9	3.0

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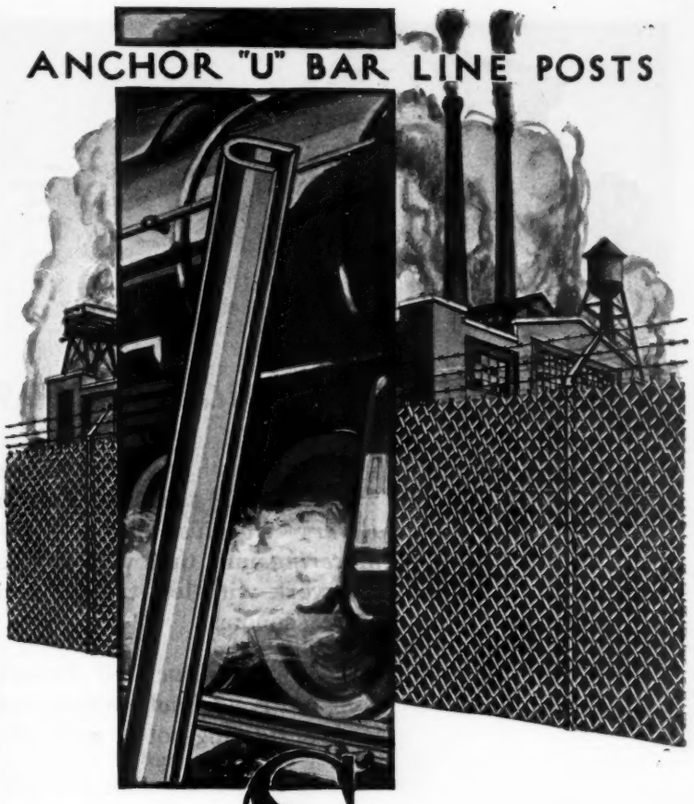

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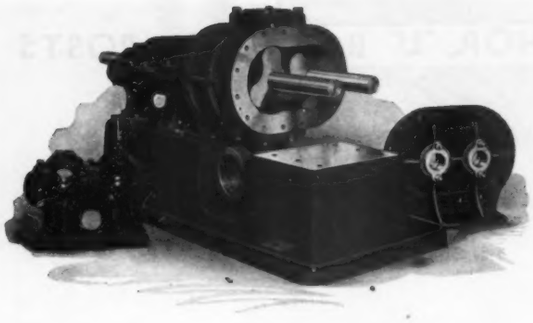

Open view of Cycloidal Rotary Positive Pump, showing the simple sturdy internal parts.

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Blowers
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City—	Prices July 1	Price changes July 1-Oct. 1					Prices Oct. 1	High and low 1929		1928		Tax Oct. 1 1930
Helena, Mont.	19.5	....	....	....	....	18.5	18.5	20.5	19.5	20.5	19.5	5.0
Omaha, Nebr.	15.25	....	....	....	9/29 13.25	...	13.25	16.25	14.25	15.25	13.25	4.0
Reno, Nev.	20.0	....	....	....	9/15 24 0	....	24.0	20.0	18.0	18.0	18.0	4.0
Newark, N. J.	13.5	....	....	....	9/24 11.5	....	11.5	15.0	14.0	16.0	15.0	2.0
Albuquerque, N. Mex.	11.0	7/30 15.0	8/2 13.0	8/9 11.0	8/14 9.0	8/29 11 0	11.0	17.0	15.0	17.0	14.0	5.0
New York, N. Y.	14.3	....	....	....	9/8 12.3	....	12.3	18.0	14.0	18.0	17.0	2.0
Charlotte, N. C.	15.3	....	....	....	9/15 13.3	....	13.3	16.0	12.0	17.0	15.0	5.0
Fargo, N. Dak.	17.9	....	....	....	....	....	17.9	18.9	16.9	17.9	12.0	3.0
Cleveland, Ohio	16.0	....	....	....	9/18 14.0	....	14.0	16.0	14.0	16.0	14.0	4.0
Tulsa, Okla.	12.0	....	....	....	....	....	10.0	14.0	10.0	14.0	10.0	4 0
Portland, Ore	16.5	....	....	....	9/15 20.5	....	20.5	17.5	12.5	14.5	14.5	4.0
Philadelphia, Pa.	16.0	....	....	....	....	10/1 15.0	15.0	17.0	15.0	18.0	15.0	3.0
Providence, R. I.	13.7	....	....	....	....	....	11.7	18.0	16.0	19.0	17.0	2.0
Charleston, S. C.	13.3	....	....	....	9/15 11.3	....	11.3	16.0	14.0	17.0	15.0	6.0
Huron, S. Dak.	16.3	....	....	....	....	....	16 3	17.3	15.3	16.3	14.5	4.0
Memphis, Tenn.	13.0	7/21 12.5	....	8/5 12.0	9/4 10.0	9/23 13.0	13.0	15.0	11.0	16.0	12.0	5.0
Dallas, Tex.	10.0	....	....	....	....	....	10.0	14.0	11.0	14.0	9.0	4.0
Salt Lake City, Utah	16.5	....	....	....	....	....	16.5	18.5	17.5	18.5	16.5	3.5
Burlington, Vt.	15.6	....	....	....	....	....	15.6	17.0	15.0	18.0	17.0	4.0
Norfolk, Va.	13.3	....	....	....	9/24 11.3	....	11.3	16.0	14.0	16.0	14.0	5.0
Washington, D. C.	13.7	....	....	....	9/24 11 7	....	11.7	16.0	14.0	16.0	15.0	2.0
Charleston, W. Va.	14.5	....	....	....	9/24 12.5	....	12.5	16.0	14.0	17.0	15.0	4.0
Milwaukee, Wis.	15.1	....	....	....	....	....	15.1	16.1	14.1	15.1	13.1	2.0
Casper, Wyo.	15.0	....	....	....	....	10/1 13.0	13.0	17.0	15.0	16.0	14.0	4.0
Seattle, Wash.	16.5	....	....	....	9/15 20.5	....	20 5	17.5	12.5	14.5	14.5	3.0
Minneapolis, Minn.	16.2	....	....	....	....	....	13 0	17.2	15.2	16.2	11.0	3.0
Average price	14.78	....	....	....	....	....	14.25	16.70	14.26	16.54	13.54	3.77

*Includes 1-cent city tax. †Paid by dealer. ‡Jacksonville prices include one-eighth cent inspection fee, but at Atlanta one-half cent fee is not included.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

(Continued from Page 46)

A. C. Glassell's No. 1 Pittsfield Plantation, N 9° E, 1,320 ft., SW cor., Sec. 41-8-10 ..... O.W.D.D.; coring 1,565 ft.
Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e ..... Coring 3,010 ft.

DE SOTO PARISH

Ark.-La. P. L. Co.'s No. 3 Johnson, 1,980 ft. N, 1,320 ft. W, SE cor., Sec. 1-11-14 ..... Rig up.
J. W. Clark's No. 1 Tidwell, 350 ft. S, 350 ft. E, NW cor. NW, Sec. 22-13-14 ..... S.D; W.O. 2,923 ft; shale.
S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 ..... S.D; sandy shale 1,354 ft.
Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11 ..... S.D. 1,066 ft.
Holly Oil Co.'s No. 1 Talbot (was Philp et al's), 220 ft. S, 730 ft. W, NE cor. NW NE, Sec. 9-13-13 ..... S.D. 1,230 ft.
Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ..... Drlg. gumbo 730 ft.
Michlouzanna O. & G. Co.'s No. 1 Payne, 410 ft. S, 398 ft. E, NW cor., Sec. 12-11-16 ..... S.D. 2,600 ft; will drop from report.
Odell & Lawton's No. 1 Tidwell-Tull, 300 ft. N, 600 ft. E, SW cor. NW, Sec. 11-13-14 ..... S.D. 3,095 ft.

OUACHITA PARISH

C. W. Frierson's No. 1 Haynes, 1,297 ft. N, 906 ft. W, SE cor., Sec. 9-17-3 ..... Bailed dry 2,466 ft; arranging to deepen.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... Drlg. 3,116 ft.
J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10 ..... S.D. 1,290 ft.
J. W. Cooper et al's No. 2 Cooper, SE cor. SE SE Sec. 32-11-10 ..... Location.
Cooper et al's No. 1 La. Delta Pecan Co., C SE SE, Sec. 32-11-10 ..... S.D. 1,000 ft.

RED RIVER PARISH

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10 ..... S.D. 2,820 ft.
T. G. Shaw's No. 1 Wilkerson, 460 ft. N, 200 ft. W, SE SE, Sec. 4-12-10 ..... Drlg. 2,200 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Location.
W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7 ..... Derrick.
Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 3-16-5 ..... Top Monroe gas rock 2,365 ft; bailed dry 2,419 ft. and 2,460 ft; D.S. test 2,479 ft; 2,509 ft. and 2,539 ft; S.W; S.D; gumbo 2,549 ft.

SABINE PARISH

Boone, trustee's No. 1 Turner, 40 ft. N, 140 ft. W, SE cor. NW NW, Sec. 4-7-11 ..... Rig up.
Tom David's No. 1 Smith, 460 ft. N, 300 ft. W, SE cor. SE SE, Sec. 27-8-10 ..... Began drlg. Oct. 14.
Franks et al's No. 1 Hays, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ..... Began drlg. Oct. 11; cmtd. 10-in. 100 ft; drlg. 350 ft.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... Top chalk 2,446 ft; drlg. 2,456 ft
Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11 ..... Top marl 2,461 ft; cmtd. 6-in. 2,465 ft.
Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ..... Rig up.
Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 31-9-13 ..... Rig up.
Loring Oil Co.'s No. 1 Garner, 270 ft. N, 300 ft. E, SW cor. NW NE, Sec. 4-7-11 ..... S.O. 2,369 ft; tested dry; bailing to test 2,381 ft.
Magnolia Pet. Co.'s No. 1 Glauque, 484 ft. N, 390 ft. E, SW cor. NW SW, Sec. 26-7-14 ..... Drlg. lime and shale 3,564 ft.

McDaniels & Lieber's No. 2 Batson, 480 ft. S, 330 ft. E, NW cor. SW SE, Sec. 16-8-12 ..... S. D. 2,136 ft; waiting for 6-in.
Merritt et al's No. 1 La. Long Leaf Lbr. Co., 8½ NE NE, Sec. 33-8-11 ..... Began drlg. Oct. 10; cmtd. 10-in. 90 ft; drlg. 500 ft.
C. D. Neff, trustee's No. 1 Turner, 1,170 ft. S, 180 ft. W, NE cor. NW, Sec. 4-7-11 ..... Drlg. 2,523 ft.
Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ..... Cmtd. 6-in. 2,310 ft.
Pelican Nat. Gas Co.'s No. 5 La. Long leaf Lbr. Co., 200 ft. S, 200 ft. W, NE cor. NW SW, Sec. 4-7-11.... Began drlg. Oct. 13; cmtd. 12-in. 100 ft.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Made 30-ft. hole 3,280-3,310 ft; S.D.
H. T. Stacey et al's No. 1 Polly, NE cor. NE NE, Sec. 18-8-12 ..... Rig up.
The Texas Co.'s No. 1 Largent, 365 ft. E, 315 ft. N, SW cor., Sec. 24-8-12 ..... Began drlg. Oct. 11; cmtd. 10-in. 118 ft; drlg. 1,765 ft.
Toteco Oil Co.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-12 ..... Reaming to bottom; T.D. 4,077 ft.
Wilson & Son's No. 1 Ganby-Garrett, NW SW, Sec. 4-5-12 (portable rig) ..... Drlg. 1,005 ft.

TENSAS PARISH

Stoval Drlg. Co.'s No. 1 Miller, NE SW, Sec. 18-10-10..... Plugged back to 692 ft; cmtd. 6-in. 700 ft; to test gas show; old T.D. 1,560 ft.
A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 32-11-12 ..... D.S. test 2,780 ft; S.W. and show gas; W.O; T.D 2,780 ft.

WEBSTER PARISH

Coyle trustees' No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.
J. P. Evans et al's No. 1 Crichton Co., NE cor. NW NE, Sec. 31-18-8 ..... Base chalk 2,327 ft; cored S.W. sand 2,575-85 ft; drlg. gumbo 2,606 ft.

WEST CARROLL PARISH

Ark.-La. P. L. Co.'s No. 1 Griffith, 660 ft. S, 660 ft. W, NE cor. NE NW, Sec. 17-22-10 ..... Cmtd. 10-in. 1,301 ft; drlg. green sandy shale 1,659 ft.

ARKANSAS

CHICOT COUNTY

H. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3 ..... Fishing D.S. 2,900 ft.

CLAY COUNTY

S. C. Jeffries, trustee's No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-3 ..... Cmtd. 10-in. 303 ft.

CLEBURNE COUNTY

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10 ..... Fishing tools 4,360 ft.
Donnelly-Craver, et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. repairing rig; T.D. 3,410 ft.

GARLAND COUNTY

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Waiting on bailing line; T.D. 3,-790 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16... Small S.O. 2-ft. sand 1,354 ft; cmtd. 6⅝-in. 1,306 ft; S.D; title work.
John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16...Rig up.

LAFAYETTE COUNTY

McIver et al's No. 1 Hottle, NW cor. NE, Sec. 1-20-6.... Derrick.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGhee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7 ..... Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ..... S.D. 2,502 ft.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... U.R. 5 3-16-in. 3,570 ft; T.D. 3,-610 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 3 Hallem, C, Sec. 17-16-26 ..... Drlg. shale 200 ft.

MILLER COUNTY

East Texas O. & Gas Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ..... Cmtd. 10-in. 150 ft; arranging to test 2-ft. sand 888 ft.
E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ..... D.S. test 2,305-11 ft. dry; cmtd. 6⅝-in. 2,799 ft; arranging test 2,807 ft.
Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 33-15-26 ..... Began drlg. Oct. 13; cmtd. 10-in. 93 ft.
Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16..... D.S. test 2,920 ft; S.W. mud and oil; arranging cmt. 6⅝-in.
Salzer & McRae's No. 1 Ross, SW cor. NE NW, Sec. 9-16-26 ..... Began drlg. Oct. 11; cmtd. 10-in. 93 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17. Tested S.W. 2,730 ft; top red beds 2,760 ft; coring 2,770 ft.
Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... Cmtd. 10-in. 62 ft.
C. W. Fierson's No. 1 Haynes, 1,297 ft. N, 906 ft. W, SE cor., Sec. 9-17-3 ..... Top Monroe gas rock 2,462 ft; D. S. test 2,483 ft; failed; cmtd. 6-in.; T.D. 2,466 ft.
Graves Bros.' No. 1 Walker, 350 ft. N, 280 ft. E, SW cor., Sec. 9-14-18 ..... Small S.O. 1,861 ft; tested dry.
A. B. Turner, trustee's No. 1 Dave Brown, 220 ft. N, 220 ft. E, SW cor., Sec. 33-15-18 ..... D.S. test 2,172-78 ft; 55 ft. mud; T.D. 2,183 ft.

PHILLIPS COUNTY

Mahon interests' No. 1 Mannheimer (no check), Sec. 15-1s-1e ..... Began drlg. Sept. 30; drlg. 200 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec 26-8-14 ..... Drlg. 1,270 ft.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ..... Cmtd. 15½-in. 240 ft; drlg. 1,-520 ft.

SCOTT COUNTY

Arkansas Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30 ..... Location.
Heavener O. & G. Co.'s No. 1 Riser, Sec. 35-4-26 ..... Fishing tools 1,530 ft.

SEBASTIAN COUNTY

Lavaca O. & G. Co.'s No. 1 Davis, C NW NE, Sec. 29-8-30 ..... Derrick.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... S.D. 2,575 ft.
H. L. Hunt's No. 1 Swilly, 330 ft. S, 330 ft. W, NE cor., Sec. 28-16-16 ..... Drlg. 2,475 ft.
Marine Oil Co.'s No. 2-B Thompson, Sec. 10-18-13 ..... Location.
Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13 ..... Hole full fluid 50% S.W; waiting on air; T.D. 3,604 ft.
Modisette Drlg. Co.'s No. 4 Union Sawmill, 330 ft. W, 300 ft. N, SE cor., Sec. 14-18-14 ..... Location.
Oil Field Corp.'s No. 1 Simmons, 330 ft. S, 330 ft. E, NW cor., Sec. 13-18-13 ..... Began drlg. Oct. 10; cmtd. 10-in. 250 ft; drlg. 275 ft.

(Continued on Next Page)

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Two spur gears, one on each shaft end, are in complete and continuous mesh within the internal gears of a floating sleeve. The sleeve takes a neutral position and the error of misalignment is taken up between the lubricated faces of the gear teeth. No bending or flexing. Nothing to fatigue and fail. Nothing to cause shut-downs or replacements.

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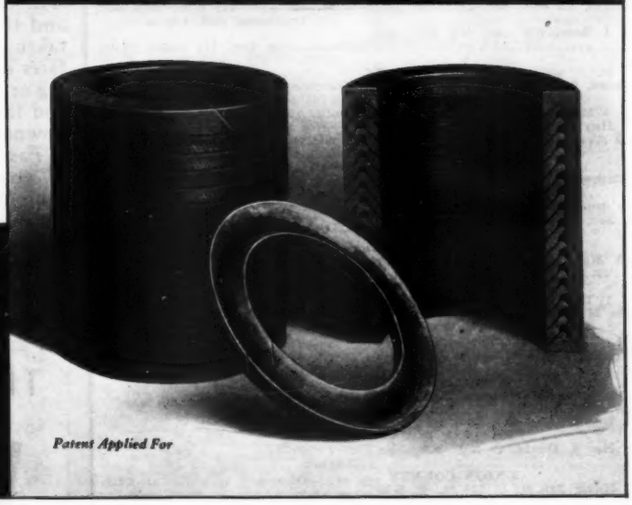

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VAN BUREN COUNTY

Glenn Kohle et al trustee's No. 1 Scalan, 200 ft. S, 200 ft. W, NE.cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D; W.O. 602 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... U.R. 5 3/16-in. 1,665 ft; T.D. 1,697 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32. U.R. 8-in. to T.D. 1,500 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. S.D. for. csg. 1,165 ft; (C.D.).

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Fe'son, Sec. 36-7-31 ..... Fishing tools 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Joe Burnham et al's No. 1 ... W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur ..... Drlg. 1,675 ft.
Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardige 100-ac. tract on Floyd Merritt tract in Y. S. McKinney Sur. ..... Derrick.
Lee Timberlake's No. 1 Tidwell, 2,800 ft. N, 300 ft. W, SE cor., Jos. Eskell Sur. ..... S.D; W.O. 3,202 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur ..... Location.

CASS COUNTY

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur ..... Rig up.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 acres in K. E. Welborn Sur ..... Drlg. gummy shale 1,700 ft.

MARION COUNTY

W. D. Chew's No. 1 Fee, 2,350 ft. W, 1,275 ft. N, SE cor., W. J. Hamilton Sur ..... Coring lime 3,230 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur ..... Drlg. gumbo 1,740 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur ..... S.D. 2,865 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur ..... Swedging; 2 jts. collapsed 8-in. arranging to cement 6⅝-in. and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas Mason Sur ..... Drlg. sandy shale 3,825 ft.

SHELBY COUNTY

Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. .... T.A. hard lime 3,350 ft.
G. R. Ridgway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur ..... Began drlg. Sept. 28; cmtd. 12½-in. 512 ft; 10-in. 570 ft; trying to kill S.W. flow 600 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e.. Fishing 6-in. and tools 2,392 ft; T.D. 2,735 ft.

ATTALA COUNTY

K. A. March's No. 1 H. A. Moore, 500 ft. W, 330 ft. S, NE cor. SE NW, Sec. 2-15-5e ..... Location.

CLAY COUNTY

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5 ..... Cmtd. 13⅜-in. 1,389 ft; gumbo and sand.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... Driving 8¼-in. to 1,495 ft; T.D. 1,436 ft.

GRENADA COUNTY

F. E. West et al's No. 1 Dubard, NW NW, Sec. 18-22-4.. Derrick.

HINDS COUNTY

Big Block Oil Co.'s No. 1 Southern Christian Institute, C N½ NE, Sec. 30-6-4 ..... S.D. 1,910 ft.
Hawkeye Gas Co.'s No. 1 Webster, NW cor. NE NW, Sec. 15-5-1e ..... Drlg. shale 2,375 ft.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e ..... Rig up.
Jackson O. & G. Co.'s No. 1 Capital Land & Inv. Co., Sec. 29-6-1e ..... Drlg 2,179 ft.
Dr. Barney Kennedy's No. 1 fee, 150 ft. E, 200 ft. N, SW cor. NE NE, Sec. 34-6-1e ..... Location.
Love Pet. Co.'s No. 1 Maley, SE cor. NW, Sec. 15-5-1e .... Top Midway 2,387 ft; top chalk 2,437 ft. and cmtd. 6⅝-in; claim oil show estimated 10 bbls., 13° gravity clean oil, no gas 2,487-90 ft; arranging to deepen and retest.
Love Pet. Co.'s No. 1 Morton Lbr. Co., 1,500 ft. E, 1,525 ft. N, SW cor., Sec. 34-6-1e ..... Derrick.
Miss. Pet. Co.'s No. 1 Baptist Orphanage, 175 ft. E, 130 ft. N, SW cor. SE SE, Sec 28-6-1e ..... Drlg. shale 2,422 ft.
Miss. Pet. Co.'s No. 1 Solvent Investment Co., NE cor. NE SW SW, Sec. 14-5-1w ..... Drlg. 2,600 ft.
Miss.-Tex. Oil Co.'s No. 1 Negro Fair Assn., SW cor. NW SE, Sec. 28-6-1e ..... S.D. 1,902 ft; title work.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.
Universal Gas Co.'s No. 1 Sharbrough, SW cor. SE, Sec. 28-6-1e ..... Began drlg. July 29; S.D; W.O. 88 ft.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 21-2-10 ..... Derrick.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Tested S.W. 3,252 ft; S.D. 3,420 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 32-8-18 ..... Fishing 4 fourbles; D.S; T.D. 2,826 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14..... Derrick.

LAFAYETTE COUNTY

Banks-Good et al's No. 1 May, 113⅓ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE cor. NE, Sec. 21-3-6 ..... S.D; W.O. 2,231 ft.

MADISON COUNTY

Barney Kennedy et al's No. 1 Raymond, 300 ft. E, 1,800 ft. N, SW cor., Sec. 32-7-2e ..... Cmtd. 12½-in. 706 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... Drlg. hard lime 2,935 ft.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Shot 2,402-18 ft; small S.O; arranging to shoot 2,387-95 ft.
Associated Oil Co.'s No. 1 School, SW cor. SW SE, Sec. 16-15-17 ..... Began drlg. Aug. 26; S.D. 32 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e.. S.D. 900 ft.
Love Pet. Co.'s No. 1 Moore (was Interior Oil Co.'s), 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e.. S.D. 900 ft.
Sabine O. & G. Co.'s No. 1 Taylor, SE cor. SW NE, Sec. 6-5-2e ..... Rig up.
Gulf Ref. Co.'s No. 1 Hamilton, 1,320 ft. N, 1,320 ft. E, SW cor., Sec. 12-5-1e ..... Began drlg. Oct. 3; cmtd. 12½-in. 810 ft; drlg. 1,150 ft.
Jackson Royalties, Inc.'s No. 1 Pate, NE cor. NE SE, Sec 12-5-1e ..... Began drlg. Oct. 5; cmtd. 12½-in. 280 ft; drlg. shale 2,120 ft.
Cleve Love et al's No. 1 Brown, C NW SE, Sec. 12-5-1e.. Began drlg. Oct. 9; drlg. 1,200 ft.
Pearl River O. & G. Co.'s No. 2 Pate, SE cor. SW SE, Sec. 12-5-1e ..... Began drlg. Oct. 7; cmtd. 10-in. 292 ft.

WARREN COUNTY

Raymond A. Moore et al's No. 1 Clark, SE, Sec. 31-16-5 (no check) ..... Derrick.
Vicksburg Oil Co.'s No. 1 Dornbush, 2,080 ft. S, 1,520 ft. W, NE cor., Sec. 8-18-5..... Began drlg. Sept. 21; drlg. 1,000 ft.

WINSTON COUNTY

Miss. Drlg Co.'s No. 1 Scarbrough, NW cor., Sec. 15-13-14. Began drlg. Oct. 5; cmtd. 12½-in. 173 ft.

YALOBUSHA COUNTY

Carter Oil Co. and J. W. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, Sec. 14-11-4..... Fishing junk 2,260 ft; T.D. 2,436 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No 1 Doherty, SW SW, Sec. 24-12-2. Drlg. sandy lime 5,133 ft.

ALABAMA

LAMAR COUNTY

Griggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... T.A. 1,740 ft.

LAUDERDALE COUNTY

A. D. Morton et al's No. 10 O'Neal est., Sec. 8-2s-13w .... Cmtd. 12½-in. 125 ft; drlg. hard lime 905 ft.

MARION COUNTY

Hobson et al's No. 1 John Clark, SE, Sec. 29-11-14 ..... Derrick pattern.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; W.O; flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-3-2w.... Drlg. 700 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 60)

Kewanee O. & G. Co.'s No. 3 Arnold, 330 ft. N and E, SE, Sec. 149, Blk. 3, I.&G.N. Sur. ..... S.D. 2,702 ft.
Danciger O. & R. Co.'s No. 1 McLaughlin, 330 ft. S and E, NW, Sec. 33, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,916 ft; rerunning 6-in. csg
Dulaney & Word's No. 1 Morse, 330 ft. S and W, Sec. 18, Blk. A-9, H.&G.N. Sur. ..... Spudding.
Empire G. & F. Co.'s No. 2-B Archer, 330 ft. S and E, SW, Sec. 139, Blk. 3, I.&G.N. Sur. ..... S.D. 2,578 ft.
Empire G. & F. Co.'s No. 1 Bell, 1,320 ft. S, 1,660 ft. E, SW, Sec. 111, Blk. 3, I.&G.N. Sur. ..... Rig on ground.
Empire G. & F. Co.'s No. 1 Cantrell, 330 ft. S and E, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Drlg. 400 ft.
Empire G. & F. Co.'s No. 1 Froshier, 1,320 ft. S and E, Sec. 177, Blk. 3, I.&G.N. Sur. ..... Spudding.
Empire G. & F. Co.'s No. 1 Sullivan, 330 ft. NW of E 64 ac. of W 104 ac. of S 264 ac., of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,134 ft.
Empire G. & F. Co.'s No. 2 Sailor, 330 ft. N and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,600 ft.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... Fishing 2,765 ft.
Magnolia Pet. Co.'s No. 1 Latham, 876 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,018 ft.
Magnolia Pet. Co.'s No. 1 Heitholt, 150 ft. S, 1,156 ft. W, SE, Sec. 152, Blk. 3, I.&G.N. Sur. ..... Location.
Magnolia Pet. Co.'s No. 2 Latham, 175 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Rigging up.
Magnolia Pet. Co.'s No. 1 Morse, 330 ft. N and W, S½ NE, Sec. 5, Blk. 26, H.&G.N. Sur. ..... Location.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Bldg. rig.
Midwest Explin. Co.'s No. 1-B Taylor, 660 ft. N and W, Sec. 7, Blk. H, A. W. Willard Sur. ..... Drlg. 500 ft.
Midgray Oil Co.'s No. 1 McCullough, 267 ft. N, 150 ft. E of 246.9 ac. in Sec. 153, Blk. 3, I.&G.N. Sur. ..... Driving 10-in. csg; T.D. 900 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Fishing for bit; T.D. 2,611 ft.
North American O. & G. Co.'s No. 1 Duncan, 810 ft. N, 660 ft. E, E½ SW, Sec. 135, Blk. 3, I.&G.N. Sur. .. Location.
Operators R. & P. Co.'s No. 1 Arnold, 330 ft. S and E, E½ NE, Sec. 149, Blk. 3, I.&G.N. Sur. ..... Standardizing 3,143 ft.
Phillips Pet. Co.'s No. 1 Barrett, 330 ft. S, 150 ft. W, W½, N 56 ac., Sec. 1,360, Blk. 3, I.&G.N. Sur. ..... Spudding.
Phillips Pet. Co.'s No. 2 Barrett, 130 ft. N, 465 ft. W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Rotary rig.
Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. ..... Standardizing; T.D. 2,403 ft.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... Estimated 4,000,000 ft. gas 2,875 ft; fishing 2,910 ft.
Shamrock O. & G. Co.'s No. 1 Reynolds, 330 ft. N and E, SE SE, Sec. 84, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,370 ft.
Skelly Oil Co.'s No. 1 Vicars, 330 ft. N and E, W½, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,640 ft.
Skelly Oil Co.'s No. 1 Heitholt, 150 ft. N, 3,806 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,040 ft.
Skelly Oil Co.'s No. 2 Vicars, 330 ft. N and W, SW, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,210 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... 3,000,000 ft. gas 2,150-70 ft; S.D. 2,892 ft; 400 ft. oil in hole.
Southern Pet. Explin. Co.'s No. 1 Baird, 330 ft. S and W, NW, Sec. 127, Blk. 3, I.&G.N. Sur. ..... Drlg. 840 ft.
Southern States Gas Co.'s No. 1 Case, 330 ft. N and W, E½, Sec. 181, Blk. B-2, H.&G.N. Sur. ..... Location.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N¼ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... Rig.
The Texas Co.'s No. 3 Brown, 150 ft. S, 330 ft. W of 247-ac. lease, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Spudding.

HUTCHINSON COUNTY

Dixon Creek Oil Co.'s No. 1 Johnson Bros., 330 ft. N and W of E 60 ac. of NW 100 ac., Sec. 1, Blk. X03, H.&O.B. Sur. ..... Drlg. 2,345 ft.
Great Plains O. & G. Co.'s No. 1 Sanford, C of S 160 ac. of N 320 ac., Sec. 87, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,410 ft.
Huber Prod. Co.'s No. 1 Johnson Bros., 330 ft. N and E, E½ NW, Sec. 30, Blk. Y, A.&B. Sur. ..... Drlg. 2,450 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Pure), 330 ft. S and E of E 240 ac., Sec. 29, Blk. Y, A.&B. Sur. ... Drlg. 2,710 ft.
Texas Interstate P. L. Co.'s No. 1 Bivins, C E½ of N 160 ac., Sec. 91, Blk. 6, H.&T.C. Sur. ..... Location.
Lanier et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Spudded.
Phillips Pet. Co.'s No. 1-A Pease, 330 ft. S, 380 ft. E, Sec. 9½, Z. C. Collier Sur. ..... T.D. 3,100 ft; T.P. 3,075 ft; S.D. for storage.
Prairie O. & G. Co.'s No. 1 Read, C SW, J. M. McDonald Sur. ..... Drlg. 2,545 ft.
Sinclair O. & G. Co.'s No. 1-C Johnson Bros., 330 ft. N and W, NE, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 2,540 ft.
Sinclair O. & G. Co.'s No. 1-A Johnson Bros., 330 ft. N, 430 ft. E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Rig.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.O. 3,065 ft. and 3,108-10 ft; S.D. 3,110 ft.
Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... 60,000,000 ft. gas; S.D. 3,219 ft; shot 140 qts. 3,150-3,220 ft; C.O.

Stansylvanian Oil Co.'s No. 1 Whittenburg, 330 ft. S and W, Sec. 139, Blk. Z, E.L.R.R. Sur. — S.D. 3,075 ft.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. — S.G. 3,760 ft; S.D. 4,142 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. — Lowering 5 3/16-in. csg; T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch — Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Dana O. & G. Co.'s No. 1 R. Vtey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. — Location.

Delmar Oil Co.'s No. 1-A Jones, 380 ft. N, 990 ft. E, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. — Rigging up standard tools 2,618 ft.

Home Gas Co.'s No. 1 Reeder, 330 ft. N and W, N½ E½ NE, Sec. 191, Blk. 3-T, T.&N.O. Sur. — Drlg. 2,735 ft.

Morton et al's No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. — Cellar.

Shamrock O. & G. Co.'s No. 1 Sullivan, 330 ft. S and E, NE, Sec. 139, Blk. 3-T, T.&N.O. Sur. — Rotary rig.

Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 164, T.&N.O. Sur. — T.D. 2,528 ft; set 8-in. csg.

Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. — Rig on ground.

Shamrock O. & G. Co.'s No. 1 Coffee, 330 ft. E, 330 ft. N, E 160-ac. tr., Sec. 355, H.&T.C. Sur. — Drlg. 3,055 ft.

Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 32, Blk. P. Mc., E.L.R.R. Sur. — Gas estimated 15,000,000 ft. 3,050-60 ft; T.D. 3,646 ft; to complete as gasser.

Texas Interstate P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 48, Blk. 6-T, T.&N.O. Sur. — Drlg. 1,540 ft.

Texas Interstate P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 6, Blk. B-10, E.L.&R.R. Sur. — Location.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 16, Blk. G, B.&B. Sur. — S.D. 580 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur — Rotary rig.

Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. S, G.C.&S.F. Sur. — S.D. 680 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1 McBride estate "A," 4,950 ft. S, 330 ft. W, E½ S½, Sec. 98, Blk. 46, H.&T.C. Sur. — S.D. 2,000 ft.

Texas Interstate P. L. Co.'s No. 1 Rockwell, C N½ of S½, Sec. 102, Blk. 46, H.&T.C. Sur. — Location.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 — S.D. 1,250 ft.

WHEELER COUNTY

Guernsey Oil Co. et al's No. 1 Sewell, 320 ft. N and E, Sec. 38, Blk. 13, H.&G.N. Sur. — Rigging up.

McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H. &G.N. Sur. — T.D. 2,030 ft.

Mid-Kansas O. & G. Co.'s No. 1 Harvey, 660 ft. S and W, NE, Sec. 56, Blk. 23, H.&G.N. Sur. — Location.

Wischkamper et al's No. 1 Kiser, 330 ft. N and E of SW, Sec. 33, Blk. 17, H.&G.N. Sur. — Drlg. 2,085 ft.

Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. — S.D. 1,325 ft.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 37, H.&G.N. Sur. — S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 59)

Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur. — Swabbed 111 bbls. in 11 days; total depth 2,056 ft.

CULBERSON COUNTY

Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land — Shut down 1,520 ft.; show oil 1,400-15 ft.

Kornrumpt et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land — Cleaning out 1,025 ft.

ECTOR COUNTY

C. P. Davis et al's No. 1 Kendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P. Sur. — Shut down 4,470 ft.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M. M.Br.&A. Sur. — Shut down 2,375 ft., corrected depth.

Simms Oil Co. et al's No. 4 University, 1,650 ft. from S and 1,320 ft. from E of Sec. 1, Blk. 35 — Drlg. 3,500 ft.

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. — Shut down 3,750 ft.; flowed 110 bbls. on July 12, shut in for storage.

The Texas Company's No. 9 Connell, 330 ft. from N and 440 ft. from W of SE cor. Sec. 1, Public School Land — Drlg. 2,600 ft.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Section 46, J. M. Day Sur. — Shut down 3,089 ft.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Wilson, 330 ft. from N and 1,200 ft. from W, Sec. 6, W. E. Richardson Sur. — Spudded.

Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Section 200, B.B.B.&C. Sur. — 2,500 ft. oil in hole from 3,090-96 ft.; shut down 3,130 ft.; plugged back to 3,124 ft.; no results from 10-qt. shot.

Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 307, B.B.B.&C. Sur. — Drlg. 2,900 ft.

The Texas Company's No. 2-A Stephens, 330 ft. from S and E, Sec. 79, Blk. 1, H.&T.C. Sur. — Drlg. 250 ft.

The Texas Company's No. 1-B Teagarden, 1,990 ft. from S and 440 ft. from E, Sec. 8, W. E. Richardson Sur. — Drlg. 130 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 2 Stokes, 330 ft. from N and 990 ft. from E of Sec. 31, Blk. 5, G.H.&H. Sur. — Drlg. 2,675 ft.

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. — Spudded and shut down.

GLASSCOCK COUNTY

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. — Total depth 2,956 ft.; shut down.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor. Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. — Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor. Sec. 129, Blk. 29, W.&N.W. Sur. — Sulphur water 1,433-46 ft.; shut down 1,456 ft.

G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. of NE of NE — Shut down 1,886 ft.

Greene O. & R. Co. et al's No. 1 Denman, 330 ft. from N and W of E half of NE, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. — Oil show 2,447-57-2,490-2,515 ft.; half full oil; total depth 2,703 ft.; shut down.

Merriwether's No. 1 Smith, 150 ft. from S, 2,400 ft. from W, Sec. 45, Blk. 33 — 2,000 ft. water in hole; shut down 3,270 ft.; 2,000 ft. sulphur water in hole; will abandon.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 — Shut down 261 ft.

HUDSPETH COUNTY

Theison's No. 1 University, 2,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E — Spudded 35 ft. and shut down.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Shut down 3,155 ft.

IRION COUNTY

Bristow et al's No. 1 Nutt, 180 ft. from NW of SW of NW Sec. 6, Gonzales County School Land — Half full sulphur water 1,678 ft.

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E, Sec. 3, Blk. 3, H.&T.C. Sur. — Spudded and shut down.

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 — Shut down 1,105 ft.

Cromwell et al's No. 1 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,320, G.C.&S.F. Sur. — Shut down 1,712 ft.; show oil 1,621-25 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land — Drlg. 1,156 ft.

P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County — Shut down 8,900 ft.; may drill deeper.

Williams & Williams' No. 1 Noelke, 200 ft. from N and 1,020 ft. from E, Sec. 8, City of San Antonio Sur. — Drlg. 1,995 ft.

Webb et al's No. 1 Nutt, 150 ft. from S and 116 ft. from W of Blk. 5, Gonzales County School Land — Shut down 100 ft.

F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line, S Wof NE Sec. 10, Gonzales County School Land — Shut down 100 ft.

JONES COUNTY

McBest et al's No. 1 Roberts — Total depth 1,000 ft.

Pope et al's No. 1 Swann, 2,023 ft. from S and 400 ft. from E of I. Miley Sur. No. 381 — Fishing 2,166 ft.

LOVING COUNTY

Arkansas Fuel Oil Co.'s No. 1 Dean, 990 ft. from NE and 2,310 ft. from SE, Sec. 84, Blk. 1, W.&N.W. Sur. — Drlg. 2,650 ft.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. — Total depth 885 ft.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. — Shut down 3,383 ft.

Independent O. & G. Co.'s No. 2 Wheat, 990 ft. from NW and 330 ft. from SW, Sec. 85, Blk. 1, W.&N.W. Sur. — Drlg. 900 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. — Spudded 140 ft.; shut down.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C. Sur. — Rigged up and shut down.

Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. — Drlg. 3,750 ft.

Rush et al's No. 1 Wheat, 330 ft. from NW and SW, Sec. 77, Blk. 1, W.&N.W. Sur. — Cellar.

Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W, Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. — Location.

California Co.'s No. 5 Reagan & McElvain, 990 ft. from NW and 330 ft. from NE of Sec. 84, Blk. 1, W.&N.W. Sur. — Drlg. 135 ft.

California Co.'s No. 6 Reagan & McElvain, 330 ft. from SW and 1,650 ft. from SE, Sec. 84, Blk. 1, W.&N.W. Sur. — Rig up.

Lee O. White et al's No. 1 Russell et al, 320 ft. from NW and 3,200 ft. from SW, Sec. 80, Blk. 1, W.&N.W. Sur. — Top pay 4,213 ft.; filled up 1,100 ft. with oil in 18 hrs.; total depth 4,218 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 300 ft. from S and W, Sec. 1, B.S.&F. Sur. — Shut down 1,305 ft.

Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. Sur. — Machine.

Panhandle Ref. Co.'s No. 2 Eckhart, 1,820 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. — 500,000 ft. gas with show oil 2,945 ft.; shut down 3,200 ft.; to plug back to 2,955 ft. to save gas.

Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. — Shut down 2,490 ft.

MIDLAND COUNTY

Kerwin et al's No. 1 Mathen, 2,310 ft. from N and 335 ft. from W line, Sec. 40, W. L. Gray Sur. — Drlg. 310 ft.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. Sur. — Shut down 3,112 ft.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W, parallel to section lines of NE cor. Sec. 8, Blk. 27, T.&P. Sur. — Spudded 10 ft. and shut down.

PECOS COUNTY

Bell et al's No. 1 Eaton, 2,310 ft. from NE and 990 ft. from SE, Sec. 33, Blk. 3, H.&T.C. Sur. — Location.

Bell et al's No. 1 Schaff & Blackman, 2,310 ft. NE and 330 ft. NW of E cor. Sec. 37, Blk. 3, H.&T.C. Sur., but located in Sec. 38, Blk. 3, H.&T.C. Sur. — Drlg. 125 ft.

Curry & Hakin's No. 1 Pecos Valley Oil Co., 1,050 ft. from SE and 1,470 ft. from SW, Sec. 36, Blk. 3, H.&T.C. Sur. — Shut down 1,629 ft.; top pay 1,577 ft.; flowing 15 bbls. per day.

Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. Sur. — Location.

Dittman's No. 1 Eaton, 2,310 ft. from SW and NW, Sec. 35, Blk. 3, H.&T.C. Sur. — Drlg. 1,525 ft.

Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 3, H.&T.C. Sur. — Location.

Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 3, H.&T.C. Sur. — Location.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. — Shut down 5,695 ft.

Humble Oil & Ref. Co.'s No. 1-B Thoman, 1,608 ft. from N and 4,062 ft. from E of Sec. 98, Blk. OW, G.C.&S.F. Sur. — Drlg. 2,315 ft.

Lewis & Slagel's No. 1 Bell, 330 ft. from N and W of SE Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. — Location.

Lockhart & Co.'s No. 1 University, C NE of SW Sec. 24, Blk. 16 — Drlg. 1,590 ft.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 194, G.C.&S.F. Sur. — Location.

Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. — Drlg. 1,032 ft.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. — Shut down 1,700 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S 150 ft. from E, G.C.&S.F. Sur. — Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,185 ft.; will drill deeper.

J. O. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. — Shut down 2,210 ft.; fishing.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. — Shut down 2,440 ft.

Perren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. — Fishing 1,765 ft.

Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W, Sec. 13, Blk. 194, G.C.&S.F. Sur. ..... Total depth 1,920 ft.; top pay 1,892 ft.; flowing 25 bbls. per day.

S. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C. Sur. ..... Spudded and shut down.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Drlg. 2,393 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Shut down 405 ft.

Side & Side's No. 1 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.C. Sur. ..... Drlg. 2,380 ft.

Schilling & Slaughter's No. 1 Yates, 1,580 ft. N and 150 ft. E of NW cor. Runnels County School Land, but located in Sec. 70, Blk. 1, I.&G.N.R.R. Sur. ..... Shut down 125 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L. Sur. ..... Shut down 3,504 ft.

Warner's No. 1 Webb, 2,650 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. .... Drlg. 1,660 ft.

Williams & Moran's No. 1 Heiner Est., 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. ..... Drlg. 575 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ..... Top pay 8,220 ft.; flowed 3,242 bbls. 24 hrs. ending 7 a.m. Oct. 13; gauged 51,489,539 ft. gas; total depth 8,697 ft.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 200 ft. from W of Sec. 25, Blk. 9 ..... Show oil 5,520 ft.

Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 ..... Drlg. 4,650 ft.

REEVES COUNTY

H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.

Black & Kink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 ..... Top pay 1,820 ft.; shot 15 qts. 1,821-30 ft.; shut down 1,860 ft.

Riggs & Smith's No. 1 Lee Monroe, 2,390 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. Sur. ..... Shut down 176 ft.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from E of Sec. 7, Blk. 5, H.&G.N. Sur. .... Temporarily abandoned.

Lee O. White et al's No. 1 Hersherson, 330 ft. from N and W lines of Sec. 5, Blk. 61, Twp. 10, T.&P. Sur. .... Shut down 4,415 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Drlg. 4,035 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Shut down 1,330 ft.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ..... Show oil 2,028 ft.; shut down 2,643 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW Sec. 56, Blk. 1, G.H.&S.A. Sur. ..... Underreaming 5 3/16-in. casing; total depth 5,560 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A. Sur. ..... Shut down 3,960 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Shut down 750 ft.

Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. ..... Location.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... Top pay 1,750 ft.; show oil 2,312-55 ft.; shot 150 qts. 3,100-35 ft.; pumped 55 bbls. 24 hrs.; total depth 3,501 ft.

Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. Sur. ..... Cem. cave 875 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 4,970 ft.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. ..... Shut down 140 ft.

Mid-Kansas O. & G. Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Shut down 4,140 ft.

STERLING COUNTY

Beesley et al's No. 1 Brown, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C. Sur., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. Sur. ..... Running 10-in. casing total depth 356 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ..... Location.

TAYLOR COUNTY

Adams et al's No. 2 Lowe, 150 ft. from N and 750 ft. from W, Sec. 19, Guadalupe County School Land ..... Drlg. 1,290 ft.

Eastland Oil Co. et al's No. 2 Hunter, 3,418 ft. from S and 2,174 ft. from E of William R. Ellis Sur. ..... Rig up.

Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-acre tract, Sec. 31, Guadalupe County School Land ..... Shut down 2,501 ft.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Drlg. 6,187 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P. Sur. ..... Drlg. 2,460 ft.

Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land ..... Drlg. 1,150 ft.

Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE Sec. 68, Blind Asylum Land ..... Rigged up and shut down.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... Shut down 2,400 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E.L. Sur. ..... Shut down 880 ft.; moved off machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. .... Drlg. out cement 4,730 ft.; total depth 5,229 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G. Sur. ..... Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Nosworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Drlg. 760 ft.

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor. Sec. 20, Blk. 24, H.&T.C. Sur. ..... Location.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 620 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. .... Drlg. 1,790 ft.

Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Drlg. 3,995 ft.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land ..... Shut down 815 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T. Sur. ..... Location.

Duffey et al's No. 2 McClintic, 328 ft. N and 967 ft. E of Sec. 206, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Rig.

Gulf Prod. Co.'s No. 1 King Ranch Oil & Lignite Co., 330 ft. from S and 990 ft. from W line, Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Drlg. 2,775 ft.

Penn and Shell Pet. Corp.'s No. 1 Anderson, 1,320 ft. from S and E, Sec. 37, Blk. Y, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,925 ft.

T. P. Coal & Oil Co.'s No. 1 King Ranch Oil & Lignite Co., 2,310 ft. from N and 990 ft. from W, Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Machine.

Weekly Oil Corp.'s No. 1 Shirk, 468 ft. from S and 2,317 ft. from E, Sec. 15, Blk. 3, M.-K.-T. Sur. ..... Spudding.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.

O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Shut down 6,770 ft.

Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L. Sur. ..... Shut down 3,035 ft.

Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y .. Shut down 4,009 ft.

WARD COUNTY

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur. .. Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.

Magnolia Pet. Co.'s No. 1 Sealy, 330 ft. from S and E of NE cor. Sec. 46, Blk. 2, G.M.M.B.&A. Sur. ..... Drlg. 2,845 ft.

R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. ..... Shut down 1,200 ft.

Richardson et al's No. 5 O'Brien et al, 330 ft. from N and 2,970 ft. from W of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 264 ft.

California Co. et al's No. 1 Lanham, 990 ft. from NE and SE, Sec. 35, Blk. 34, H.&T.C. Sur. ..... Building rig.

Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C. Sur. ..... Shut down 5,077 ft.; show oil 5,070 ft.; shot 140 qts. from 5,047-77 ft.; no results.

Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Shut down 2,520 ft.

T. P. Coal & Oil Co.'s No. 1 Barker, 330 ft. from SW and NW of Sec. 27, Blk. B-29, Public School Land ..... Drlg. 2,353 ft.; top pay 2,256 ft.; flowed 112 bbls. by heads 20 hrs.

California Co.'s No. 1 Allen, 2,310 ft. from NE and 330 ft. from SE, Sec. 30, Blk. 34, H.&T.C. Sur. ..... Building rig.

WINKLER COUNTY

Empire Gas & Fuel Co.'s No. 1-C Daugherty, 990 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 74, Public School Land ..... Preparing to run 8¼-in. casing; total depth 2,662 ft.

Magnolia Pet. Co.'s No. 1 Bashara, 1,650 ft. from S and 2,310 ft. from W, Sec. 17, B-3, P.S.L. Sur. ..... Rigging up.

Magnolia Pet. Co.'s No. 3 Scarborough, 1,650 ft. from N and 990 ft. from W of Sec. 1, Blk. 77, Public School Land ..... Drlg. 2,155 ft.

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,120 ft.

Prairie Oil & Gas Co.'s No. 1 Johnson, 2,310 ft. N and E, Sec. 16, Blk. 74, Public School Land ..... Drlg. 2,887 ft.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.

Turman et al's No. 1 Daugherty, 2,310 ft. from E and 2,310 ft. from S line, Sec. 16, Blk. 74, Public School Land ..... Shut down 2,666 ft.

EASTERN FIELDS

(Continued from Page 70)

district, the Conley Gas Co. is drilling on the W. M. Adams farm and has reached 1,380 feet. In the same district, the Woodyal Gas Co. is active drilling second tests on the Luke G. Adkins farm, the Ambrose Adkins farm, the R. L. and P. Stowers farm and have a location ready for a second test on the R. L. Stowers farm.

In Ceredo district, Wayne County, W. P. Floyd has a location ready on the J. H. and J. B. Start farm. In Grant district, Cabell County, Hamilton Gas Co. has cleared a location on the Lillie Carter Heirs farm. In Curry district, Putnam County, J. V. Reishman has a location on the Madison L. Oxley farm.

SOUTHWEST PENNSYLVANIA

The Carnegie Natural Gas Co. completed a fair oil well on the Fanny Weir farm, South Franklin Township, Washington County. It was drilled in the Fifth sand at 3,048 feet, estimated good for 25 bbls. a day initial. In East Finley Township of the same county, H. V. Sproul & Co. has a fair gas well on the H. M. Plants farm and in the 50-foot sand at a depth of 3,185 feet.

In Greene County, the Duquesne Gas Corporation completed its test on the Robert Leslie farm at 3,335 feet and in the Fifth sand it was dry. In Harmer Township, Allegheny County, the Chemical Oil & Gas Co.'s No. 1 well on the Hugh Campbell farm, previously reported as the Campbell Heirs No. 2, is still making about 35 bbls. a day, which is the largest well in that section for several years.

In Center Township, Greene County, George Drake and others are shut down for water at 1,220 feet on the Dean Piatt farm. In Perry Township, the Carnegie Natural Gas Co. has also had to shut down for water in its second test on the George Bowers farm. Likewise, Freeman and Behm have had to shut down their test on the Charles Tripp farm, Morris Township, after reaching 2,200 feet, and the Manufacturers Light & Heat Co. after spudding in and starting drilling on the Felix Bell farm have also shut down. The Natural Gas Co. of West Virginia has about reached the sand on the A. H. Ackley farm, Richill Township. In this township, the Manufacturers Light & Heat Co. has two wells drilling, one on the Ward H. Chambers farm, and the other on the J. R. Wise farm.

ROCKY MOUNTAIN AREA

(Continued from Page 48)

in 1921 by the Continental, Carter and Prairie Oil companies which lost the hole at 4,890 feet before it reached the second Wall Creek, the pay horizon at Midway. The first Wall Creek had a show of oil and gas in the joint well. This is the second of the three tests to be drilled on the Midway, Geary and North Geary Domes under the co-operative group development plan in which the Federal and State governments, the Midwest Refining Co., the Salt Creek Producers, the Mountain Producers and the Midway-Geary Syndicate are co-operating. The drilling will be a little deeper than on the Midway Dome. The Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, the discovery well on the Midway Dome, ran the string of 3-inch seamless tubing and pumping rods after cementing off bottom water, but was unable to make a satisfactory test and is pulling rods and tubing. The hole was plugged back from 5,215 to 5,207 feet. Before cementing it averaged 600 bbls. per day of which 400 bbls. was oil and 200 bbls. was water. The Midwest's No. 29-DT, NW, Section

35-40-79, the Salt Creek test which drilled all horizons down to the granite, is not yet completed, but is plugging back. Total depth was 5,420 feet. It plugged back to 3,455 feet at which depth it is now sidetracking pipe.

Fremont County

Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, which has been delayed for several weeks with pipe trouble at 4,485 feet, is now running the 4¾-inch tools and is cleaning out. It is bottomed between the Dakota and Lakota sands. Lander Corp.'s No. 1, NW NE, Section 35-33-99, Bartram's Gap, is drilling at 1,000 feet. Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, is preparing to plug back from the Sundance at 4,635 feet to the Lakota sand to test shows of oil and gas in that horizon before going back to the big gas sand in the Muddy. Producers & Refiners Corp.'s No. 2, SE NW, Section 33-34-92, Muskrat Dome, is reaming on bottom at 4,450 feet. It took a Haliburton test at 4,394 feet. Same company's No. 10, NW cor., Section 14-32-95, Big Sand Draw, is redrilling at 3,573 feet. Old bottom was at 3,631 feet.

Carbon County

Midwest Refining Co.'s No. 27 Union Pacific, NW SE SE, Section 11-20-81, Elk Mountain, is spudding at 50 feet. Producers & Refiners' No. 3, SE NW, Section 2-19-88, Hatfield, is bottomed at 4,300 feet and preparing to underream. The 4½-inch is at 4,256 feet. Same company's No. 4, SW SE, Section 7-26-89, Wertz Dome, is bottomed at 3,392 feet and preparing to clean out, and its No. 9, Section 30-26-87, which is being plugged to abandon as an oil well, plugged back from 1,978 feet to 1,050 feet and pumped 120 bbls. of water in 10 hours.

Lincoln County

Midwest Refining Co.'s No. 1 Larcher, NW SE SE, Section 25-37-117, Little Grays River, is being abandoned at a total depth of 2,752 feet in the Thaynes limestone of Triassic age. It cut a number of water sands but had no important oil or gas shows. It started in the Mowry shale. It was drilled under a cooperative group development plan approved by the Secretary of the Interior. Mountain Oil Corp.'s No. 1 State, NE cor., Section 36-25½-115, Wyoming structure, is underreaming at 580 feet with the 15½-inch at 575 feet.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Union Pacific, C NW NE, Section 13 19-104, North Baxter Basin, cemented 6⅝-inch casing at 3,465 feet on top of the Sundance and is about ready to drill in. It was estimated at 3,500,000 feet a day. The location is about the center of the field. Same company's No. 1 Cappers, SW NE, Section 2-19-104, is cleaning out to bottom at 3,200 feet. Prairie Oil & Gas Co.'s No. 75-A, SW NW, Section 11-26-90, Little Lost Soldier, which is being deepened after finding large production in the top of the Tensleep at 3,942 feet, is drilling at 4,002 feet in sand.

Park County

A report reaches Denver that the Great Northern Railroad is offering $1 per barrel for fuel oil from refineries operating on Oregon Basin and other black oil crudes in the Big Horn Basin as against $1.25 per barrel, the price it has been paying. Confirmation has not been obtained in Denver as these contracts mostly are made in the East. There is no posted price for fuel oil in that district, but purchases are made under contract and it is understood some of these contracts are about to expire and that the new offer is for renewals as of January 1, 1931. The report is rather disconcerting to producers of black crude as the posted field prices range from 80 to 90 cents and a reduction in the price of fuel oil may result in a curtailment of operations unless the pipe line and railroad companies make reductions in transportation charges to offset the difference. It is doubtful if the producers can stand a reduction in the price of crude that will make it possible for the refiners to cut the price of fuel oil to the figure named and there is a possibility of a general shutdown in the Big Horn Basin unless there is an adjustment in transportation charges. The Ohio Oil Co. last week announced that it had shut down all its pumping operations in the Oregon Basin Field following the expiration of contracts for the sale of crude which were not renewed.

The Texas Production Co.'s No. 2 Sonners, C SW SW, Section 20-51-100, Oregon Basin, is rigged and ready to spud. Midwest Refining Co.'s No. 31 Frannie Oil, SW cor. NE, Section 25-58-98, Frannie Dome, is shut down for orders at 3,230 feet and probably will be abandoned. It found water in the Embar, Tensleep and Madison, though it is an offset to the discovery well in the Madison which produced 2,400 bbls. the first 24 hours. Same company's No. 31 Rosenberg, SW cor. SE, Section 24-58-98, is drilling at 2,460 feet with the 8⅝-inch on bottom. Continental Oil Co.'s No. 27 Elk 2, NE NE, Section 24-58-100, Elk Basin, is drilling at 1,150 feet.

Hot Springs County

Midwest Refining Co.'s No. 8 Weeks, NW SE, Section 6-44-98, Wagonhound, is drilling at 4,430 feet in gray white lime with the 6¼-inch at 4,303 feet.

IDAHO

Grand Teton Oil Co.'s No. 1 Blevin, Section 33-5n-44, Teton County, is shut down at 3,304 feet in the Apen shale waiting for rotary equipment. Crystal Dome Oil Co.'s No. 1, near Crystal, north of Payette, western Idaho, has control head in place and the well now has an open flow of 5,000,000 feet of gas per day with a pressure of 1,150 pounds. It blew in late in September at 1,865 feet. Idaho-Oregon Petroleum Co.'s No. 2 Idaho Canning, NW SE, Section 33-9n-5w, which had a big gas and water blowout at 1,270 feet last March, is resuming at 1,800 feet and has 8¼-inch on bottom.

MONTANA

The Inland Petroleum Co. of Canada completed its No. 2 well in the Border Field this week and put it on the pump. The well is making about 60 bbls. daily as well as 2,000,000 feet of gas. The gas is being sold in the field for fuel. This gives the Inland a total oil production of 100 bbls. daily in addition to 5,000,000 feet of gas. In the same field, the Hannah Porter Oil Co.'s No. 2, completed last week, has gone on production and is making 30 bbls. Two more wells are nearing completion in the Border Field, the Askalta and Nellie B. tests.

In the Kevin Sunburst Field the "31" Petroleum Co. found only a show of oil in its well and has plugged and abandoned the hole. This well is in the vicinity of the Fulton and Rice gushers and it is believed the oil has been drawn out of the very porous sand found at the "31" location. The Montana Gas Co., drilling pretty well to the north on the west side of the field, found the Sunburst sand only 3 feet thick and showing a very small amount of oil and gas. The well is still drilling and will be carried to the black lime unless production is found in a stray above that depth.

The Fulton Petroleum Co. ran into a heavy gas flow in the Two Medicine sand at 810 feet in its test on the Milk River structure in northern Montana and the rig was damaged in the resulting explosion. The gas strike is considered encouraging and drilling will be resumed as soon as repairs are made.

Cut Bank

The Texas Production Co. found the Sunburst sand 132 feet thick in its test on Section 13-35-6, Cut Bank area, but encountered a heavy water flow at this depth. Drilling will be continued as the well still has a good chance for production in the lower sands. In the same district the Glacier Oil Co. has succeeded in sidetracking a lost bailer and is drilling at 2,530 feet. The Glacier test is located on Section 33-35-5.

The Texas Pacific Coal & Oil Co. well, on the Woman's Pocket structure, found a 15,000-bbl. water flow in the Kootenai sand at 1,540 feet. The water has been shut off and drilling will continue.

The Montasota Oil Co. test on the Nuzium structure, Section 7-8-50, has been taken over by the Creel interests and is being drilled deeper. The bit is close to the Muddy sand, expected at 1,000 feet. The Nuzium structure is at the south end of the Baker uplift.

The Continental Development Co., an independent company, has taken over a 480-acre permit on the Golden Dome in southern Montana, not far from the Dry Creek Field. Half of the acreage lies in Section 10-3-21. A number of structures in southern Montana have been promised considerable play as the result of the Ohio's strike on Dry Creek. The Ohio well is still shut in, but it is reported shipments of crude to Salt Lake City will be made in the near future, a part of the production of the new gusher having been contracted to the Utah Oil Refining Co.

Pipe Line Runs

Daily average pipe line runs from the various pools for the week ending October 11 follow:

WYOMING	
Salt Creek	28,380
Frannie	130
Big Muddy	2,040
Oregon Basin	1,800
Dutton	150
Elk Basin	760
Byron	200
Warm Springs	....
Lovell	....
Ferris	10
Grass Creek	2,090
Hamilton	900
LaBarge	1,690
Lance Creek	120
Lost Soldier	5,490
Osage	1,330
Poison Spider	390
Rock River	2,150
Simpson Ridge	50
Teapot Dome	30
Dallas-Derby	280
Hudson	230
South Casper Creek	....
Pilot Butte	....
Total	48,230
MONTANA	
Cat Creek	1,100
Kevin-Sunburst	5,080
Pondera	1,650
Lake Basin	80
Border	560
Total	8,470
COLORADO	
Moffat	1,169
Fort Collins	1,114
Florence	423
Iles	1,083
Tow Creek	317
Boulder	25
Rangley	50
Total	4,181
NEW MEXICO	
Hogback	430
Rattlesnake	1,378
Table Mesa	85
Artesia	706
Cap Rock (Maljamar)	394
Jal	1,329
Hobbs High	32,103
Lea City	4,987
Miscellaneous (Lea County)	1,527
Getty	142
Total	47,081
Grand total	108,012
Previous week	100,950
Difference	7,062

WEST TEXAS FIELDS

(Continued from Page 59)

to be drilled in this area for a long time, and plugging of old wells has been taking place in this pool for many months, drilling apparently forgotten until this new extension was reported.

Andrews County Well

Fuhrman Petroleum Co.'s No. 1 Ford, in Section 16, Block A-43, Andrews County, is now shut down at 4,559 feet, flowing 120 bbls. per day, with flow partly pinched. A 10,000-bbl. tank is being erected for more storage. There is about 1,500 bbls. of oil in storage. This is the well which drew much attention to Andrews County when it encountered its first oil at 4,262 feet with an increase from 4,372-77 feet, and another at 4,445-50 feet.

West Texas did not suffer a cut in crude oil prices during the week when cuts were made on other crude oils in the State, especially in North Texas and the Panhandle, but operators are not so optimistic in the Permian Basin and believe it is not too late for prices to be lopped on oil from that district, although many others feel the cut in North Texas crudes will help to stabilize the market, and consequently put the price of West Texas crude on a firmer basis.

Ector County Test

The Gault-Brown Co. has reported it will spud a well before February 1, 1931, on its nine-section block in Ector County, the block falling about midway between the Penn Pool to the south, and the Southern Crude Oil Purchasing Co.'s No. 1 Cowden, in Section 26, Block 43. This will be another interesting test for Ector County, a county which has been closely watched for the past eight months, during which time it has had big lease and royalty "plays," and has seen the opening of the new pool in the northern part of the county on the Cowden ranch.

COMPLETIONS IN WEST TEXAS

Coke County

Arkansas Fuel Oil Co. and others' No. 1 W. A. Stepp, dry and abandoned, total depth 4,670 feet.

Pecos County

Barnes and others' No. 1 W. A. Sanford, total depth 1,385 feet, plugged back to 1,383 feet, top pay 1,350 feet, initial production 15 bbls. G. A. Henshaw, Jr.'s No. 1 University, total depth 1,678 feet, plugged back to 1,673 feet, top pay 1,670 feet, shot 10 quarts 1,668-73 feet, reshot with 20 quarts 1,668-73 feet, initial production 25 bbls.

Schleicher County

Phillips Petroleum Co.'s No. 1 J. A. and W. T. Whitten, dry and abandoned, total depth 6,880 feet.

Winkler County

Shell Petroleum Corp. and The Texas Company's No. 1 E. W. Cowden, top pay 2,585 feet, increase in oil 3,061-73 feet, initial production 744 bbls. and 35 per cent water, total depth 3,116 feet.

Ward County

Gulf Production Co.'s No. 5 Hutchins, top pay 2,518 feet, initial production 185 bbls., total depth 2,8 . 03 tfee , bbls., total depth 2,803 feet.

WEST TEXAS PRODUCTION

Week Ending October 18

County—	No. wells	Bbls.
Andrews	2	116
Crane	368	27,273
Crockett	48	1,713
Ector	70	8,233
Fisher	8	1,880
Garza	...	29
Howard-Glasscock	528	32,450
Irion	7	170
Jones	73	1,377
Loving	29	2,680
Mitchell	148	2,099
Pecos	500	107,480
Reagan	253	24,135
Runnells	3	11
Scurry	5	9
Taylor	3	110
Upton	251	7,415
Ward	44	4,200
Winkler	591	61,585
Total production this week		282,965
Total production last week		272,789
Increase		10,176

Runs Through Trunk Lines

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	22,511
Gulf, 10-inch, Ranger	35,549
Humble, 2-8-inch, San Angelo	38,987
Humble, 10 and 12-inch, Station "A"	53,339
Illinois, 2-8-inch, Del Rio	31,598
Magnolia, 8-inch, De Leon	18,289
Pasotex, 8-inch, El Paso	11,411
Shell, 10-inch, Healdton	48,104
Shell, 10-inch, Houston	12,598
Texas, 12-inch, Houston	7,348
Total	279,734

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	1,461
Burford Ref. Co., Pecos	3,159
Blue Bonnet Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	10,757
Col-Tex Ref. Co., Colorado	7,000
Great Western Ref. Co., Big Spring	3,752
Humble Oil & Ref. Co., McCamey	None
Richardson Ref. Co., Big Spring	990
Tonkawa Ref. Co., Pyote	None
Wickett Ref. Co., Wickett	160
Total	26,279

Tank Car Shipments

Texas Pacific C. & O. Co. from Hurdle	1,157
Fox and Thorsen from Mertzon	150
Thomas-Brann from Grant City	200
Reagan County Pur. Co. from Texon	383
Orient from Hurdle	25
Southern Crude Oil Pur. Co. from Wickett	19,732
Total	21,657
Total daily average distribution	327,670
Total daily average production, including Lea County, New Mexico	316,795
Daily average from storage	10,875

NATURAL GAS FILM

A film is in process of making by the Bureau of Mines picturing the various activities of the natural gas industry. It will not be completed for three or four months.—C. E. K.

DISTRIBUTION OF THE PRE-MISSISSIPPIAN

(Continued from Page 33)

The writer wishes to express his appreciation to the following for information, criticism and suggestions: Sidney Powers, Luther H. White, Ira H. Cram, Elizabeth Isaacs, Robert H. Dott, G. S. Lambert, A. I. Levorsen, Charles Ryniker, Howard S. Bryant, T. C. Hiestand, Robert L. Kidd and Richard Hughes.

STRATIGRAPHY

In studying the stratigraphy of the pre-Pennsylvanian rocks in Kansas it is noticeable that the section represented in the Salina and Forest City basins (Figure 1) is more closely allied with the rocks of Iowa and Missouri than with Oklahoma.

Pre-Cambrian

Granites and schists have been reached in many wells in Kansas. They were exposed by erosion along part of the Granite Ridge and in small areas in Norton, Decatur, Russell and Rush Counties before Pennsylvanian deposition. These basement rocks have been considered pre-Cambrian in age by Moore[11] and other writers.

Basal Sandstone

In a large part of Kansas, as elsewhere, the sedimentary series begins with a basal sand, the product of erosion during the base leveling of the basement rocks. It is coarse, feldspathic, the quartz grains angular to fairly well rounded, ordinarily associated with considerable muscovite and biotite. Ordinarily it ranges from 30 to 100 feet in thickness, but 4 miles southeast of Ellsworth it is more than 1,000 feet. This sand was probably stratified by the Cambrian sea in southeastern Kansas, and correlates roughly with the Reagan and La Motte, as shown by Edson,[12] but over most of Kansas is probably Ordovician in age, or even younger in a few places.

Arbuckle Limestone

The Arbuckle underlies the entire State, so far as present data show, except in a few small areas. Its absence may be due either to nondeposition or to removal by post-Arbuckle, post-Devonian, or post-Mississippian erosion. An area of the first or second case is found in Township 8s, Range 4e, where the Simpson rests on Granite, while small areas illustrating the third or fourth case are found in western Norton and eastern Decatur Counties, northeast of LaCrosse, at Gorham, and along the crest of the Granite Ridge southward from the Nebraska line into Wabaunsee County, and just west of Cottonwood Falls.

Decker[13] has measured approximately 8,000 feet of Arbuckle lime in the Arbuckle Mountains, but in southeastern Kansas it is usually about 1,000 feet. and on the Barton Arch it does not exceed 300 feet. At Eldorado, on the Granite Ridge, it is from 365 to 1,100 feet thick.

On the Barton Arch the limestone is chiefly white and dolomitic and is characterized by oolitic chert and interbedded coarse sands, angular to fairly well rounded. A similar zone is reported by Decker as occurring about 3,400 feet below the top of the formation. If these zones are correlative, it seems probable that some 3,400 feet of upper Arbuckle limestone is missing on the Barton Arch. In addition there is about 4,000 feet of the lower Arbuckle which is not represented in this area, due to overlap.

In southern and eastern Kansas the Arbuckle is a fine-grained brown dolomite with occasional cherty phases.

That part of the Arbuckle represented in Kansas, being probably near the middle of the formation, may be considered lower Canadian or upper Ozarkian.

The Arbuckle limestone has been prevailingly called the "Siliceous lime"[14] in Kansas. It can be traced northward from Oklahoma by means of well log correlations so that there is no doubt of its continuity. It is primarily a dolomitic lime and is only locally siliceous. Several other formations are more siliceous, notably the Mississippian. The term "Siliceous lime" is therefore inappropriae and misleading and it is suggested that the term be dropped.

The Simpson in Kansas is very similar to that in Oklahoma, consisting of bright bluish green shales, white limestone and dolomite and rounded sands interbedded, having a total thickness of 50 to 150 feet. In Riley County it contains a bed of oolitic hematite about 25 feet thick. White[15] differentiated three divisions of the Simpson on his pre-Chattanooga map of northeastern Oklahoma, namely, the Burgen sand, Tyner shale and "Wilcox" sand. Edson[16] has distinguished the "Wilcox" sand in Kansas by means of heavy mineral analyses and found it only in a limited area. It probably does not extend farther north than the Eldorado Field.

Since the "Wilcox" sand resembles a number of similar sands in the Simpson formation, the oil fraternity commonly applies the name to any Simpson sand. For this reason, would it not be well to abandon the name entirely?

In tracing the Simpson northward from Oklahoma it is found to become much thinner and it is not practicable to distinguish different members. On the accompanying map it is represented as a single lithologic unit. With more research it may be possible to define the limits of the different divisions.

Many occurrences of fossils in the Simpson in Kansas have been noted, and in every case upper Black River age (upper Simpson) was indicated. The Simpson sea, therefore, must have been overlapping progressively northward, so that only the upper Simpson is represented over most of Kansas.

Urschel Limestone

Overlying the Simpson formation is a bed of limestone, from 100 to 180 feet in thickness where typically developed in the Salina Basin. Thinning due to post-Ordovician erosion is noticeable toward the crest of the Barton-Chautauqua Arch. In central Kansas the lime is only from 10 to 30 feet thick. In some places, as in Rooks, Smith and Marion Counties, all of the Urschel is missing, but there is a limestone of Black River age at the top of the Simpson. This can only be determined by paleontological evidence and the data at present are not sufficient to allow the separate mapping of this limestone. The Urschel as mapped therefore includes in places some upper Simpson limestone, just as the Viola does on the Oklahoma portion of the map. (Figure 2.)

In central and southern Kansas the lower 40 feet or so of the Urschel is very similar lithologically to the Fernvale (lower Richmond) of Oklahoma. It is usually a coarsely crystalline, white limestone, somewhat mottled with black material between the crystals. Over a great part of central Kansas only this lower bed remains. In many places it is very porous due to pre-Mississippian weathering and forms a satisfactory oil producing horizon. This lime was cored by the Empire Oil & Refining Co. in the Eldorado Field, where it was 20 feet thick. Some fossils which were obtained were sent by R. L. Kidd[17] to Dr. E. R. Cumings, of Indiana University, who considered them to be of Richmond age. Lithology and fauna thus indicate that the lower, coarsely crystalline bed of the Urschel limestone is Fernvale.

The upper part of the Urschel consists of both finely crystalline and dense cherty dolomitic limestone. In Barber and Pratt Counties the chert predominates. Owing to its position above probable Fernvale limestone this bed is seemingly younger than any bed in the Viola limestone.

In Riley County, northern Kansas, there is only about 30 feet of light brown dolomite overlying 20 feet of the coarsely crystalline phase, below which are 110 feet of dense and finely crystalline cherty limestone. If a correlation on the basis of lithology can be relied upon, this suggests that the upper bed and the Fernvale are feathering out toward the north, and a lower bed, probably Galena in age, appears and thickens toward the north.

The limestone unit above discussed was named the Urschel limestone by Barwick,[18] and since its age and correlation are not fully determined it seems best to retain the term. The Urschel limestone is probably not entirely correlative with either the Galena of Iowa or the Viola of Oklahoma.

Maquoketa Shale

The Maquoketa is a greenish gray dolomitic shale, ranging in thickness from 30 to 75 feet. It is thickest and most dolomitic in the southern part of the Salina Basin and thins northward. In southwestern Iowa wells have shown it to be missing entirely.

In many places the lithology of the Maquoketa shale is almost identical with that of the Kinderhook, and where the Younkin limestone is not present between them it is often impossible to fix the contact between the two shales.

The stratigraphic position and lithology of this shale, as well as some fragmentary fossils which it contains, permit little doubt of the correctness of its correlation with the Maquoketa, Sylvan and Cason shales, suggested by Barwick[19] and by Edson.[20]

Younkin Limestone

The limestone overlying the Maquoketa shale is gray and white, finely crystalline, mostly dolomitic, and occasionally cherty. The thickness is 200 to 400 feet in the Salina Basin and about 500 feet in the Forest City Basin. (Figure 1.) Locally just west of the Granite Ridge it contains at least one lense of course, rounded sand about 65 feet below the top. The Younkin is known only in the Salina and Forest City Basins.

The mapping of the erosional remnant of Younkin in Harvey and Reno Counties has been particularly difficult because the Maquoketa and Kinderhook are lithologically very similar and both sometimes contain dolomite beds which, on the driller's log, may be mistaken for Younkin. Much of the stratigraphic evidence seems to indicate Kinderhook age for both the greenish gray shales and the included dolomites, but this has been contradicted by the paleontological evidence of the Gypsy Hege well described below.

Evidence which points to Kinderhook age in this area for the entire section between the "Mississippi lime" and the Urschel lime may be summarized as follows:

1. The interval between the base of the "Mississippi lime" and the Urschel remains nearly constant at about 250 feet regardless of the presence or absence of the supposed Devonian limestone. This was pointed out by Hiestand[21] and shown in his north-south cross section.

2. In the Helmerick and Payne well, Section 22-21s-3w, casing was set in the lime and Sporangites huronense was found in the shale below the lime.

3. One and sometimes two dolomite beds occur in the Kinderhook shale in the Valley Center Pool and in Kingman County, with typical Chattanooga shale at the base.

4. The Urschel is eroded and only the lower coarse lime remains. There is very little erosion at this horizon in Oklahoma.

Evidence which indicates that the dolomitic limestone in the green shales between the "Mississippi lime" and the Urschel is of Siluro-Devonian age, is as follows:

1. A sand, which is very similar to Misener or Sylamore, is often present on top of the lime.

2. Paleontological evidence described below indicates Devonian or Silurian age for the lime.

Fossils are very scarce in the northern Younkin, but recently a core was taken by the Gypsy Oil Co. in its No. 1 Hege well in Section 13-22s-2w, Harvey County, Kansas, which contained a highly fossiliferous layer. The limestone which was encountered at a depth of 3,330 feet was about 80 feet thick, consisting of white sandy lime, slightly cherty in the upper 40 feet, underlain by 40 feet of dolomite lime, finely granular and very porous, due to the leaching out of fossils and other lime content. The fossiliferous layer occurred at 3,397-3,400 feet. Dr. Charles Ryniker, with the Gypsy, considered the fossils to be of Devonian age and sent a portion of the core to Dr. R. C. Moore, state geologist of Kansas. Although the fossils were poorly preserved, Moore succeeded in identifying some 10 genera and 6 species, his conclusions were: "I should say at once and with definiteness that the dolomite in the Hege well is certainly not Kinderhook. Indeed I am inclined to lean toward Silurian rather than Devonian."[22]

As shown on the areal map, (Figure 2) the Hege well is in the area of the erosional remnant of Younkin, and it would not be surprising if only lower Younkin were represented here.

In a deep well near Forest City, Mo., which is only a few miles from the northeastern corner of Kansas, cores and samples were studied by Ulrich,[23] who identified 75 feet of upper Devonian limestone, 330 feet of middle Devonian cherty, dolomitic limestone, and 140 feet of Silurian (Lockport) dolomite. Evidently the Younkin in northeastern Kansas consists largely of beds younger than the Hunton limestone of Oklahoma, with a lower member approximately equivalent to the Henryhouse member of the Hunton.

In view of the abovementioned uncertainties in correlation it seems best to retain the name Younkin suggested by Barwick[24]

MISSISSIPPIAN

Misener Sand

In the Valley Center Pool, just north of Wichita, and in the Voshell Pool in Township 21s, Range 3w, and between these two points in Harvey and Sedgwick Counties and extending westward into Reno County, a sand occurs just below the Kinderhook shale. The quartz grains are fine, angular to rounded and often cemented by dolomite. The total thickness ranges between 3 and 15 feet in most places.

This sand occupies the stratigraphic position of the Misener and Sylamore sandstones, and like them occurs in isolated lenses on the old eroded pre-Mississippian surface. It is an oil reservoir in some places, but has never been of much importance in Kansas.

Kinderhook and Chattanooga Shales

The Chattanooga shale can be traced from Oklahoma into Kansas as far northward as Marion County where it appears to lose its identity in the lower part of a much thicker light greenish shale which correlates with the Kinderhook of Iowa. The same species of plant spores is found in both shales.

Near the Kansas-Oklahoma line black Chattanooga shale is found above, below and in the middle of gray dolomite shales, as in Marland's No. 1 Webb, Section 2-27n-3w, Grant County, Oklahoma, and in Gypsy's No. 1 Williams in Section 16-35s-3w, Sumner County, Kansas. Farther north greenish gray shales appear above dark gray and black shales and dolomites, as in Allison-Fitzwilliams' No. 1 Gsell, Section 24-26s-1w, and in Section 9-30s-2w and Section 36-32s-5e. Northward the Kinderhook is almost entirely greenish gray shale, but the black Chattanooga persists at the base as far north as the Empire's No. 1 Seibel well in Section 28-20s-2e, and in the Voshell Pool.

The Kinderhook in northern Kansas is usually from 150 to 200 feet in thickness, but in Harvey County where the Younkin erosional remnant occurs, it is in some places, only 30 feet. It is probable in such cases that the position of the upper part of the shale is taken by limestone of Kinderhook age. This change appears to take place toward the southern boundary of Kansas where the lower member of the "Mississippi lime," about 40 feet in thickness, is noncherty and sometimes separated from the lime above by a thin greenish gray shale.

It seems probable, therefore, that only the lower part of the Kinderhook shale is equivalent to Chattanooga, a conclusion which is substantiated by the accepted correlations in Illinois and Missouri.

Mississippian Limestone

The upper part of the Mississippian in Kansas consists of cherty white or light tan colored, finely crystalline limestone, which usually shows evidence of prolonged weathering and concentration of chert at the top. As mentioned above, a noncherty member occurs at the base of the lime.

Either through nondeposition or post-Mississippian erosion, all of the Mississippian is missing over the Barton Arch and the northern part of the Granite Ridge. It is therefore to be expected that different parts of the Mississippian will occur in different parts of Kansas.

Buchanan's[22] work indicates that the Boone is to be found only in the southeastern quarter of the State. Toward the north and west are limestones of St. Louis and Chester age. Recent deep wells in Clark County, Kansas, and northwestern Oklahoma have penetrated as much as 1,600 feet of Mississippian limestone, of which at least the upper 400 feet is of Chester age, according to Roth,[23] who has studied the paleontologic evidence.

PENNSYLVANIAN

Basal Pennsylvanian Conglomerate

Erosion affecting the distribution of the pre-Mississippian rocks did not finally cease until the Pennsylvanian sea had completely transgressed the area. The basal Pennsylvanian conglomerate must therefore be considered.

This conglomerate, which was first described by Moore,[27] consists chiefly of residual chert and dark red clay, with some quartz grains and thin beds of dense limestone. Only a little red clay represents it on the crest of the Granite Ridge and there is very little evidence of it east of the ridge. The conglomerate is best developed on and near the Barton Arch. The thickness is usually from 40 to 100 feet, but on the west side a thickness of 235 feet was encountered in the Phillips No. 1 Spitz well in Section 24-12s-25w, and other wells farther south show similar thicknesses.

In the Welch Pool, Township 20s, Range 6w, in Rice County, the conglomerate is nearly all chert, the lower part of which may be weathered chert in place. This is the type locality of the Welch chert of Moore.[28] As shown by well cuttings from the wells discussed below, there is no Pennsylvanian shale below the Welch chert at this locality.

Samples from the Phillips Petroleum Co.'s No. 1 Leona well, NE NW NE, Section 3-21s-6w, showed the following section: 3,335-60 feet, red, yellow and white variegated shale; 3,360-74 feet, dark red residual clay and white and yellow weathered chert; 3,374-3,439 feet, tan weathered chert; 3,439-41 feet, light bluish green clay shale carrying some rounded quartz grains; 3,441-58 feet, white crystalline lime, chert 10 per cent, top Mississippian in place; 3,458-3,504 feet, typical Kinderhook shale.

In the Prairie Oil & Gas Co.'s No. 3-B W. L. Welch well in NW NE SW, Section 35-20s-6w, Rice County, Kansas, the base of the Mississippian limestone was found at the depth of 3,508 feet. Below was typical Kinderhook shale to 3,710 feet. Sporangites huronense (Kinderhook) was found at 3,555-75, 3,635-40 and 3,680-85. Urschel limestone underlies the Kinderhook.

At the type locality the Welch chert consists of residual weathered chert and geest,[29] of which at least the upper part was stratified by the Pennsylvanian sea. It is underlain by Mississippian limestone in place. The Welch chert is therefore correlative with the basal Pennsylvanian conglomerate as discussed above. Perhaps the term "Welch conglomerate" would be more descriptive to apply to the entire extent of this formation.

At Gorham, west of the town of Russell, where the Pennsylvanian rests on granite, the basal conglomerate oil producing zone is feldspathic and has been called the "Gorham sand" or "Gorham conglomerate."

In the Eldorado Field the Stapleton oil zone occupies the same stratigraphic position, but there is very little detrital material between the Pennsylvanian and the truncated Ordovician rocks. The oil is found rather in the weathered surface of the older rocks.[30]

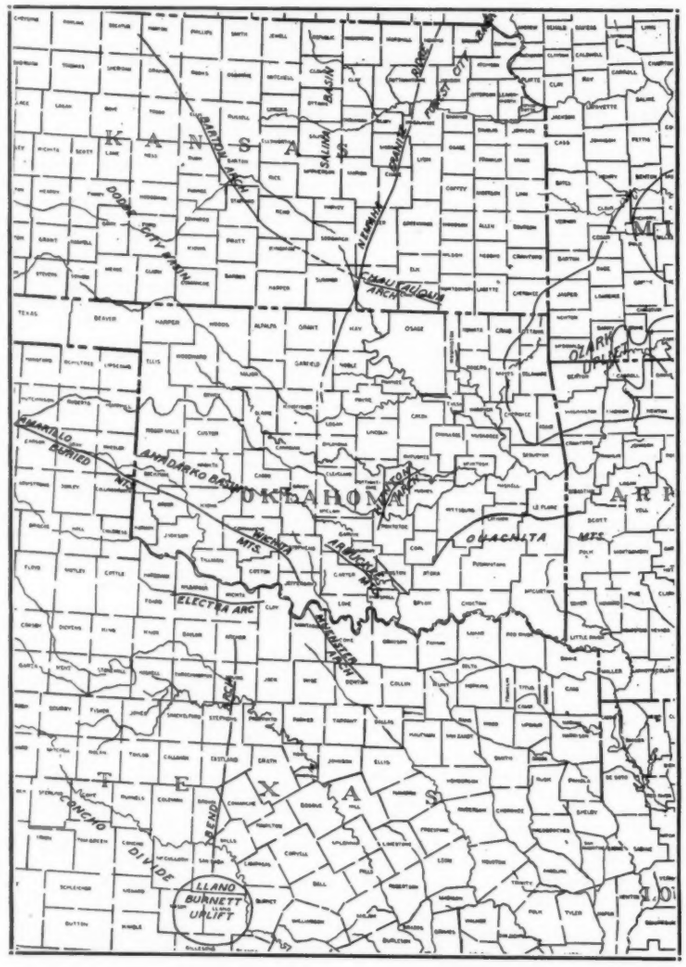
Well preserved fossils, particularly Fusulinella haworthi, found by the writer in the conglomerate in several wells on the Barton Arch indicate probably lower Marmaton, although there is some possibility of Cherokee age. On the Granite Ridge the unconformity occurs below shale of upper Cherokee age.

The age of the Welch conglomerate between the Granite Ridge and the Barton Arch, is therefore probably upper Cherokee, but represents a progressively later overlap toward the northwest, where it is probably of early Marmaton age, and in northwestern Kansas it may be considerably younger.

Structure

Kansas has two major positive structural features. The more spectacular is the buried Nemaha Mountain range or Granite Ridge, which crosses the State trending about N 18° E. The granite is buried under 550 feet of sediments at the north Kansas line, but plunges deeper toward the south, being about 5,500 feet below the surface at Garber, Okla.

The real backbone of Kansas is a much larger and broader feature, the Chautauqua-Barton arch, which extends from the Ozark uplift in a northwesterly direction through Chautauqua, Barton and Norton Counties. The general trend is about N 45° W, nearly parallel to the buried Wichita-Amarillo Mountains which strike approximately N 60° W. Cheney[30a] suggests that the Concho Divide-Llano-Barnet positive element (Figure 1) is similar to the Barton arch, both areas having resisted subsidence, while a geosyncline developed in southern Oklahoma, where the Wichita and Arbuckle Mountains were later uplifted.



Index map showing location of major structural features of Mid-Continent region.

Three structural depressions occur between the elevated structures, namely, the Forest City Basin in the northeast, the Salina Basin in the north central, and a basin in southwestern Kansas for which the name Dodge City Basin is proposed.

Many smaller folds occur in Kansas and North Central Oklahoma nearly parallel to the Nemaha Mountains and crossing the Chautauqua-Barton arch, the two structural lines intersecting with angles of 100 to 110 degrees facing the Ozark Mountains. As pointed out by Fath[31] the sedimentary series is obviously unable to transmit horizontal stresses so far from centers of orogeny, and the structural lines must therefore indicate lines of faulting or folding in the basement rocks.

The geological history of Kansas has been very similar to that of northern Oklahoma. The same periods of erosion are apparent, increasing in duration toward the northwest.

The basal sand of the sedimentary series, which is about 1,000 feet thick a few miles south of Ellsworth, must indicate a near-by pre-Cambrian topographic high. If this were a structural elevation it was probably in approximately the location of the Barton arch, since that area was evidently susceptible to later folding. As previously mentioned, that part of the Arbuckle limestone now found on top of the Barton arch seems to correlate with a zone about 4,000 feet above the base of the formation in the Arbuckle Mountains, which probably indicates that the Arbuckle sea progressed gradually northward, and perhaps was somewhat later in covering the Barton arch than other parts of Kansas. The same conclusion was reached by White[32] in considering the southwestern portion of the Ozark uplift in northeastern Oklahoma, and undoubtedly the same reasoning applies to that part of the same uplift called the Chautauqua arch in Kansas. The Barton arch and Chautauqua arch therefore probably began their history in pre-Arbuckle time.

Following the Arbuckle there was a break in deposition, and renewal of the Barton and Ozark uplifts. It is difficult to determine how much of the Arbuckle limestone was removed at that time, and how much by post-Mississippian erosion. In Clay and Riley Counties wells have shown that the Arbuckle was entirely removed and Simpson rests on granite. The thickness of Arbuckle on the Chautauqua arch where it is overlain by Mississippian rocks is about 1,000 feet, while on the Barton arch where the Mississippian is absent, it is about 250 feet. The difference may represent approximately the amount removed by post-Mississippian erosion.

The Simpson Sea, like the Arbuckle, gradually transgressed northward. Only the upper part of the Simpson seems to be represented in Kansas, except in the south central part. The Urschel limestone lies disconformably on the Simpson, and evidence of a break in deposition is not noticeable.

In Oklahoma there is a known unconformity at the outcrop between the middle Viola and upper or Fernvale member. In Kansas the evidence mentioned in discussing the Urschel limestone seems to indicate that another lime member occurs above the Fernvale, but there is a decided unconformity between this lime and the overlying Maquoketa, since only the Fernvale is found in places in the area of the Younkin lime inlier in Harvey County.

There is little evidence of an unconformity at the top of the Maquoketa shale. In the Seminole district the Sylvan is remarkably uniform in thickness and where it is unusually thin the Hunton is missing above it. In Kansas the Younkin appears to lie conformably, or at most, disconformably on the Maquoketa shale.

Reeds[33] has proved faunal breaks in at least two horizons in the Hunton limestone, the more important one being between the Silurian and Devonian. As mentioned in discussing the stratigraphy of the Younkin limestone, this hiatus in the Forest City Basin extends from the base of the Middle Devonian to Middle Silurian (Lockport). Folding at this time must have consisted of gentle warping.

Following Hunton and Younkin deposition there was a renewal of upwarping and gentle folding throughout the entire Mid-Continent region and beyond. The Ozark region, the Barton arch, the Hunton arch, on which the Seminole district is located, and the Arbuckle region were uplifted at this time. The resulting erosion truncated the pre-Mississippian rocks on the Barton arch and around the Ozarks. In the Seminole district the Hunton was removed over a considerable area and this period of erosion is evidenced on the south side of the Arbuckle Mountains by the absence of the Hunton limestone near the town of Sylvan. On the Barton arch granite was exposed in several places, either at this time or during post-Mississippian erosion.

Another period of uplift occurred following Mississippian deposition. Further movement was recorded along the old structural lines. As explained by Levorsen[34] there was an accompanying downwarp in southeastern Oklahoma which allowed the deposition of the Morrow group, while erosion continued on the north and west. In Kansas, west of the Nemaha Mountains and particularly over the Barton arch this period of erosion continued from the end of Chester time until early Marmaton (middle Allegheny) time.

In the Ardmore district, Tomlinson[35] has shown that the first major uplift occurred about the end of Morrow time. In addition, the major faunal break occurs at the top of the Morrow, and it therefore seems probable that the movement at the end of Chester time was only a broad warping and tilting of the entire Mid-Continent area toward the southeast, while the post-Morrow uplift was much more pronounced, resulting in the north-south lines of folding which were produced chiefly by faulting of the basement rocks. This uplift is of the utmost importance to the oil industry, for it produced a large number of anticlinal structures which have proven exceptionally prolific oil pools.

The Nemaha granite ridge is the best example of structures of this period. On the east side of the Augusta Field wells have proven the existence of a fault having a downthrow on the east of 600 feet[36]. The available evidence points to the same condition on the east side of the Eldorado Field.

Other structural features of this type which appear to have been formed at the

same time are Voshell, Thomas, Tonkawa, Garber, Oklahoma City and many smaller ones in northern Oklahoma and central Kansas.

The mechanics involved in these structures is practically the same in all cases, resulting in folding with accompanying faulting which cuts all the rocks older than Pennsylvanian. Most of them are outside the area of Morrow deposition, so there is no evidence to show directly whether the faulting occurred before or after Morrow time. The deduction can be made, however, from the evidence in areas of Morrow deposition, as discussed above.

Although it may be suspected that some movement occurred along these fault lines in the basement rocks during post-Devonian warping, the writer has been unable to find conclusive evidence of it. The Mississippian at Eldorado, where present, appears to parallel the older beds, and the thinning of the Urschel occurs in a south or southeasterly direction, regardless of position on the Granite Ridge, except that it was locally removed on the higher domes. This is interpreted to mean that the thinning of the Urschel occurred on the Chautauqua arch during post-Devonian erosion, and that the Granite Ridge did not exist at that time.

Renewed uplift of the **Hunton arch** in the Seminole district of Oklahoma is shown by erosion of the Mississippian Caney shale which is about 400 feet thick in the Seminole City Field, while only the lower 100 feet is present at Earlsboro. This uplift was not confined to the Hunton arch, however, but extended westward and was probably simply due to the southeastward tilting which began near the end of Chester time. In Oklahoma County, Oklahoma, very little Mississippian remained at the time of the faulting. In the Oklahoma City Field the vertical displacement of the Arbuckle limestone in Section 18-11n-2w, is approximately 2,200 feet, yet there is only 10 feet of "Mayes lime" (Chester or Osage)[37] on the downthrow block east of the fault[38].

Taff[39] states that "near the beginning of the Pennsylvanian or near the close of the Mississippian, the rocks of the Arbuckle region were folded and the western part was elevated into land, probably into mountains . . . Faulting on a large scale also occurred, involving the whole Paleozoic section below the top of the Mississippian, besides the pre-Cambrian granite and porphyry. After the elevation there was extensive erosion, which exposed the rock section down to the Cambrian in the western part of the Arbuckle Mountains."

The more recent data collected by Tomlinson[40] indicate that this uplift was post-Morrow rather than post-Mississippian.

The uplifts described above resulted in the removal of all the Mississippian rocks on the crests of most of the small sharp anticlines, which must have remained exposed as islands until late Cherokee time. At Oklahoma City and Garber the basal Marmaton rests on Arbuckle. In places on the Barton arch, and along the Granite Ridge the granite was exposed.

Over the Barton arch the land must have been low and flat, for the products of weathering were not removed. The basal Pennsylvanian conglomerate contains residual chert, red clay and quartz. Part of the chert is oolitic and evidently derived from the Arbuckle, while some of it may have come from the Mississippian. There are also weathered Simpson shales which would have been disintegrated if transported more than a short distance by water.

By the end of Pottsville time (early Cherokee) the Pennsylvanian Sea had submerged the south end of the Granite Ridge near the Oklahoma line, and had advanced northward along the east side of the ridge into Nebraska, and along the west side perhaps as far north as Wichita. Late Cherokee sediments cover the ridge at Eldorado and by early Marmaton time the sea had covered the Barton arch and nearly all the Granite Ridge. The residual weathered material on the Barton arch was reworked to some extent and became the basal Pennsylvanian conglomerate which is the oil-producing horizon at Gorham and in practically all the small pools on the Barton arch, with the exception of the Fairport Pool.

Russell County

Although the Barton arch was formerly higher than the Granite Ridge it has been depressed by the post-Pennsylvanian westward tilting (Figure 3) which extended from Southwest Texas to Iowa.

The present distribution of the pre-Mississippian rocks in Kansas and Oklahoma is the result of a long history, which included at least three periods of major crustal warping and one period of sharper folding and faulting, with consequent erosion following each period.

Some of the broader arches began their history during the per-Cambrian, and were repeatedly uplifted by later movements, while many of the smaller anticlines and faulted structures are early Pennsylvanian in age and have since been affected only by Pennsylvanian and Permian folding

Bibliography

‡F. C. Schrader, U.S.G.S. Geol. Folio No. 159, p. 4.

[1]F. L. Aurin, G. C. Clark and Earl A Trager, "Notes on the Subsurface pre-Pennsylvanian Stratigraphy of the Northern Mid-Continent Oil Fields." Bull. Amer. Assoc. Petrol. Geol., Vol. 5, No. 2 (1921), pp. 117-153.

[2]Jon A. Udden, "Occurrence of Ordovician Sediments in Western Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol. 10, No. 6 (June, 1926), pp. 634-35.

[3]W. H. Twenhofel, "Ordovician Strata in Deep Wells of Western Central Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol. 11 (1927), p. 49.

[4]John S. Barwick, "The Salina Basin of North Central Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol. 12 (1928), p. 177.

[5]Fanny C. Edson, "Pre-Mississippian Sediments in Central Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol. 13, No. 5 (May, 1929), p. 441.

[6]Luther H. White, "The Subsurface Distribution and Correlation of the pre-Chattanooga ('Wilcox' Sand) Series of Northeastern Oklahoma." Bull. Okla. Geol. Survey, 40-B (June, 1926).

[7]Ira H. Cram, "Cherokee and Adair Counties." Bull. Okla. Geol. Survey, 40-QQ (May, 1930), Plate 1.

[8]A. I. Levorsen, "Geology of Seminole County." Bull. Okla. Geol. Survey, 40-BB (March, 1928), Fig. 3.

[9]Robert H. Dott, unpublished data.

[10]Robert Roth, "The Robberson Field." Bull. Okla. Geol. Survey. 40-K (May, 1927). Fig. 6, p. 42.

[11]R. C. Moore, "Geologic History of the Crystalline Rocks of Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol. 2 (1918), p. 98.

[12]Fanny Edson, op. cit.

[13]Charles E. Decker, "Physical Characteristics of the Arbuckle Limestone." Okla. Geol. Survey, Circular No. 15, p. 12 (Jan., 1928).

[14]Barwick, op. cit., p. 186.

[15]Luther White, op. cit.

[16]Fanny C. Edson, op. cit., p. 451.

[17]R. L. Kidd, unpublished Geological Note for the Bull. Amer. Assoc. Petrol. Geol.

[18]J. S. Barwick, op. cit., p. 184.

[19]John S. Barwick, op. cit., p. 184.

[20]Fanny C. Edson, op. cit.

[21]T. C. Hiestand, "Voshell Area in McPherson County," The Oil and Gas Journal (June 5, 1930) p. 36.

[22]R. C. Moore, letter of August 23, 1930.

[23]E. O. Ulrich, reported in Missouri Bureau of Geol. and Mines, Vol. 16 (1922), 2d ser. p. 196.

[24]John S. Barwick, op. cit. p. 184.

[25]George S. Buchanan, "The Distribution and Correlation of the Mississippian of Oklahoma." Bull. Amer. Assoc. Petrol. Geol., Vol. 11, (1927) p. 1,315, Fig. 4.

[26]Robert Roth, oral communication.

[27]R. C. Moore, "Early Pennsylvanian Deposits West of the Nemaha Granite Ridge, Kansas." Bull. Amer. Assoc. Petrol. Geol., Vol 10, (1926) p. 206.

[28]R. C. Moore, op. cit., p. 212.

[29]R. C. Moore, op. cit.

[30]John R. Reeves, "El Dorado Oil Field, Butler County, Kansas." Amer. Assoc. Petrol. Geol. Symposium, Relation of Oil Accumulation to Structure, Vol. 2, (1929) p. 161.

[30a]M. G. Cheney, "History of the Carboniferous Sediments of the Mid-Continent Oil Field." Bull. Amer. Asso. Pet. Geol., Vol. 13, No. 16, (June, 1929) p. 561.

[31]A. E. Fath, "Geology of the Eldorado Oil and Gas Field," Bull. 7, Kans. Geol. Sur., (1921) p. 149.

[32]Luther White, op. cit., p. 10.

[33]C. A. Reeds, Am. Jour. Sci., 4th Ser., Vol. 32, p. 258, (1911).

[34]A. I. Levorsen, "Geology of Seminole County," Okla. Geol. Survey, Bull. 40-BB, (March, 1928), p. 37.

[35]C. W. Tomlinson, "The Pennsylvanian System in the Ardmore Basin," Okla. Geol. Survey, Bull. No. 46, (March, 1928), p. 20.

[36]R. L. Kidd, oral communication.

[37]Ira H. Cram, "Geology of Cherokee and Adair Counties." Okla. Geol. Survey, Bull. 40-QQ, (May, 1930), pp. 36-37.

[38]Reported by Chester R. Thomas in Slick's No. 1 Banta well, SE SW SE, Section 18-11n-2w, Oklahoma City Field.

[39]J. A. Taff, "Preliminary Report on the Geology of the Arbuckle and Wichita Mountains in Indian Territory and Oklahoma." Report of Prof. Paper No. 31, U.S.G.S., (1904), Bull. 12, Okla. Geol. Survey, (1928), p. 36.

[40]C. W. Tomlinson, op. cit., p. 20.

WIDER SPACING WITH MORE DEEP DRILLING

(Continued from Page 30)

wells to 40 acres on most leases. The Glenn sand lay at about 1,500 feet and the cost of drilling a well was low enough to warrant a continuance of the conventional method of well spacing. The development of the Cushing Field in Creek County, from 1914 on, saw the introduction of wider well spacing, and 25 wells to the quarter section of 160 acres was customary on some leases, together with a lot of irregular well spacing scattered over the field, but while Cushing which produced from sands at 2,175 feet down to 2,800 feet, was being developed in this way, the shallow Healdton, Okla., field, which, with Glenn and Cushing, is ranked among America's largest producing areas, was drilled four wells to 10 acres on many leases. Big production came from depths 920 feet down to 2,000 feet, the biggest pay lying at about 1,100 feet. Producers thought they were warranted in drilling four wells to 10 acres because of the low cost per well as compared to Cushing or even Glenn.

Following the introduction of spacing one well to each 10 acres in Burbank, the Tonkawa Field in Oklahoma was developed in the same manner, and thereafter it became the general custom in all but shallow areas in Oklahoma and Kansas, and is in use in numerous fields in other Mid-Continent states and some Rocky Mountain fields. The result has been that 1,000 oil wells in 1930 drain the same amount of sand that 2,500 to 4,000 wells did in the old days of shallow sands and inexpensive drilling. It cost say $150,000 to drill a well in the Oklahoma City Field. In 1912 47 wells of average depth could be drilled in Oklahoma at the price of one well in the Oklahoma City Field in 1929-30, and 20 wells could have been drilled at the cost of one well in the Greater Seminole deep sand area. In fact in some parts of Oklahoma where drilling was active in 1912, 50 wells were drilled for the cost of one well in the Oklahoma City Field this year.

One Well to 40 Acres

The Indian Territory Illuminating Oil Co. drilled its discovery well in the Oklahoma City Field in the middle of a 40-acre plat and that company was strong in the advocacy of developing the whole field on a basis of one well to the 40 acres to avoid a flood of production, but objections were made by other operators and in the absence of unanimity the plan of one well to 10 acres became the rule outside the city limits.

Town lot drilling, wherever there has been any, has made it difficult to maintain a program of wide spacing of wells, as evidenced in some of the fields in California and in Oklahoma City, but the number of wells drilled within the corporate limits of cities and towns has been small in proportion to the total number of wells that have been drilled in the country.

The idea of developing new pools slowly by drilling one well to the 40 acres is seriously discussed by oil men, especially in fields where the play is deep and the cost of drilling expensive. It is considered logical, especially on blocks to be operated on a unit basis. The unitization of oil fields and the development along conservative lines, keeping production down to actual requirements is steadily gaining adherents. Looking ahead, producers can see only a continuance of overproduction for years, and at low prices, if every effort is not made to develop new areas slowly. Therefore unitization, which a few years ago was scoffed at, is now looked upon as the salvation of a great industry. Therefore wider and wider spacing of wells may be looked for in the future until we reach the point where the industry is again searching for a sufficiency of crude to meet its current requirements, at which time producers can drill the thousands of inside locations where there is a practical assurance of fat returns in crude oil which meanwhile has been left stored in the ground.

Summing up the reasons for the decline in oil well percentage and the increase of dry hole percentage, we can only say that fewer oil wells are needed to supply our production requirements, while the wildcatter is more active than ever before in his anxiety to open a Yates, or a Van, a Kettleman Hills or a Hobbs Pool, and it will ever be that the more wildcat wells we drill the greater will be our percentage of failures, because every wildcat adds to the known barren places, requiring the wildcatter to go farther and farther afield in his search for oil.

The following table of dry hole percentages over a period ranging from 1910 to 1929, inclusive, shows the growth of failures in drilling operations. California is not included because until recent years dry hole figures in that State were not available:

Year	Wells comp.	Dry holes	Pct. dry holes
1910	13,656	2,436	17.8
1911	13,273	2,297	17.6
1912	16,183	2,564	15.2
1913	24,932	4,612	18.5
1914	22,470	5,237	23.7
1915	13,631	3,587	24.1
1916	23,834	3,993	16.1
1917	22,355	4,718	21.1
1018	24,926	5,733	23.0
1919	28,512	5,756	20.2
1920	33,385	7,375	22.1
1921	21,091	5,012	23.8
1922	23,759	5,329	22.4
1923	23,458	5,883	25.1
1924	20,656	4,950	24.0
1925	25,623	6,415	25.0
1926	28,222	7,681	27.2
1927	22,961	6,929	30.18
1928	21,428	6,887	32.14
1929	25,132	7,600	30.24

PERCENTAGE OF DRY HOLES TO TOTAL WELLS DRILLED IN THE UNITED STATES FROM JANUARY 1, 1915, TO JUNE 30, 1930

Field—	Total wells comp.	Total dry holes	Pct. dry holes
Pennsylvania Grade Fields	78,242	10,750	13.74
Central Ohio	10,990	3,099	28.30
Lima	6,958	865	12.46
Indiana	3,856	1,201	31.15
Michigan	1,168	208	17.81
Illinois	7,129	1,863	26.13
Kansas	35,353	9,111	25.77
Oklahoma	95,337	24,142	25.32
North Central and West Texas	50,606	16,919	33.43
East Central Texas.	3,462	1,235	35.73
East Texas	336	78	23.28
Texas Panhandle	2,845	409	14.38
Gulf Coast	20,798	7,743	37.23
Southwest Texas	4,985	1,714	34.38
North Louisiana	11,000	2,719	24.72
Arkansas	7,852	1,543	19.65
Kentucky	27,143	5,393	19.87
Tennessee	378	172	45.50
Georgia	2	2	100.00
Florida	17	17	100.00
Alabama	11	11	100.00
Mississippi	80	68	85.00
Wyoming-Montana	7,336	1,582	21.56
Colorado	539	276	51.37
Utah	48	36	75.00
New Mexico	728	294	40.38
California	*15,883	4,046	25.47
Total	393,081	95,496	24.30

*Completion figure includes only oil wells and dry holes. No record of gas wells completed in California.

LA.-ARK. FIELDS

(Continued from Page 61)

gas coring sandy shale at 1,895 feet. Greenwood Production Co. abandoned No. 2 Bollinger, Section 36-23-12, Carterville, at 3,173 feet as the prospects were it would be so small a pumper it scarcely would pay itself out. The Texas Company's second deep test in Carterville, No. 1 Pine Woods Lumber Co., Section 25-23-12, up in the northeast corner of the pool, was dry on drill stem test at 2,941 feet and was drilling sand showing oil at 3,061 feet. Gulf Refining Co., which went over southern Bossier Parish and into Webster with a torsion balance survey that left nothing neglected a year or so ago, has crews at work west of Bellevue in the northern part of Bossier on an equally thorough survey.

Speaking of surveys, titles to the 70,000-odd acres in northeastern Claiborne Parish held by T. B. Slick at the time of his death are being investigated and there is an undercurrent of gossip that this work is preparatory to the start of the long discussed and anticipated series of deep tests, 5,000 to 8,000 feet, Slick was reputed to have in mind when he sent his agents into the territory. Lou-

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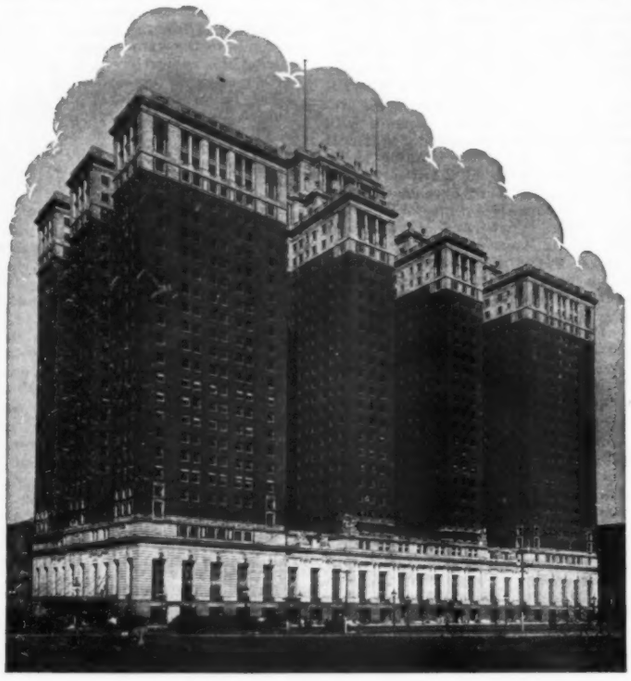

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isiana Gas & Fuel Co., which bought A. C. Glassell's No. 1 Pittsfield, Section 41-8-10, Concordia Parish, a small gasser, and surrounding acreage, has recemented at 1,491 feet for the second time, passed up the gas and is coring at 1,565 feet.

Monroe Gas Field

One small gasser and a wildcat failure in Morehouse were all the Monroe gas field had to offer in the way of completions and Richland was out of the picture altogether. Ouachita Natural Gas Co.'s No. 7 Sandidge, Section 24-20-4, made 7,970,400 feet of gas at 470 pounds from 2,180 feet and Pelican Natural Gas Co.'s No. 1 Tensas, Section 17-18-6, was abandoned as a dry hole at 2,003 feet. C. W. Frierson's wildcat southwest of Monroe, No. 1 Haynes in Section 9-17-3, Ouachita Parish, topped the Monroe gas rock at 2,462 feet, approximately 300 feet below producing depth in the proven area 15 or 20 miles northeast, and made a dry test.

Something unusual for Richland occurred when Southern Carbon Co. ran a test on No. 2-C M. L. McCoy, Section 1-16-6, at 2,450 feet and got nothing, not even salt water. The well is in the northeast corner of the field and may perhaps help to define the 2,450-foot production in that direction though there is one well farther east, and several failures. Alto Gas Co., with No. 2 Hunt in the NE SW, Section 13-17-5, and United Carbon Co. with No. 2 Noble in the NW NE, Section 37-15-6, are starting two wells that classify equally well as wildcats or edge wells. The first is a quarter mile north of Austin & McDonald's No. 1 Hunt which, with 61,000,000 feet of gas from 2,431 feet total depth, stretched proven area a mile northwest and the second is a quarter mile south of any production and has dry holes west, east and south of it.

Zwolle District

Arkansas Fuel Oil Co.'s No. 1 Russell in the NW NE, Section 26-8-12, the farthest north well in Zwolle, testing dry and abandoned at 2,600 feet does not make things look so bright for The Texas Company's No. 1 Largent, a quarter mile further northeast in Section 24-8-12. That is, it would not if Zwolle were a pool like, say, Haynesville. But Zwolle, being Zwolle, a dry hole does not mean that an offset on either side will be a failure. Pelican Natural Gas Co. made a 25-bbl. pumper of No. 4 Louisiana Long Leaf Lumber Co., in Section 4-7-11, the eastern extension, at 2,557 feet—rather deep for that neck of the woods. Two miles south of this extension, Lide and others' No. 1 Ponder in the SE NW, Section 15-7-11, at 2,456 feet was in chalk topped at 2,446 feet and in the ordinary course of events is scheduled to run a test during the next few days. Lohman & Walker's No. 1 Hubley in Section 21-7-11, a mile southwest of Lide, topped the marl from which the north extension wells are producing, at 2,461 feet and cemented 6-inch at 2,465 feet for a test. Should it produce it would give Zwolle proven area a width of almost 6 miles north and south—but that does not mean it all would be productive territory. Only much drilling and testing of both the shallow (marl) and deep (chalk) horizons can determine that.

Stovall Drilling Co., after drilling to 1,560 feet on No. 1 Miller in Section 18-10-10, Tensas Parish, many miles north of A. C. Glassell's Concordia Parish wildcat gas well, decided to plug back to 690 feet and has cemented 6-inch casing at 700 feet to test a gas show that developed while making hole but was not tested. J. P. Evans and associates' well in the southern part of Webster Parish, No. 1 Crichton Co. in Section 31-18-8, went out of the chalk at 2,327 feet, cored a water sand at 2,575-85 feet and was in gumbo at 2,606 feet. Begun on the strength of the show in the Gibsland well—Triangle-Ruston Drilling Co., No. 1 McDermott in Section 28-18-6—it has had much the same experience except that it has not had any show of anything.

Belmont and others' No. 1 Buck in Section 16-15-17, Ouachita County, Arkansas, topped the red beds at 2,765 feet after a test at 2,730 feet was dry and is making hole. Location is about 4 miles northwest of the two or three producers that put the Mount Holly district on the map. Graves Brothers' No. 1 Walker in Section 9-14-18, a still wilder wildcat 10 miles southwest of Camden, had a small show of oil at 1,861 feet. J. W. Olvey of El Dorado has blocked 17,000 acres centering in and around the NW of Townships 19 and 20, Columbia County, 3 miles north of Emerson. Davis & Cassidy, also of El Dorado, are planning a deep hole on 800 acres in the Shongaloo district of Webster Parish, Louisiana, with Section 20-23-10 as the probable location.

EAST TEXAS

There lately has been considerable of a lease play in the western end of Harrison County, Texas, and adjoining counties based largely on the Van and Henderson development, the area involved being in the northeast trend of the structure on which these two are located. Several of the major companies have gone in for protection, some on a rather large scale, and individual lease traders' activities are remindful of an ant hill. East Texas territory's one completion during the week was a dry hole, Texas-Louisiana Producing Co. abandoning No. 1 O. M. Lawrence in the Harrison Davis Survey (a wildcat) at 3,016 feet. Humble Oil & Refining Co. is reported to have bought the west half of Shell Rock Petroleum Co.'s block in western Harrison County for a price not named but with completion of the Shell Rock's well on the Oliver Dougherty land in the W. B. Burriss Survey to an unnamed depth as part of the consideration. The well was last reported, more than a month ago, shut down at 3,520 feet.

Production

Daily average runs from the field totaling 95,010 bbls. reflected an increase of 2,330 bbls. from the division as a whole. Daily average runs from the several pools were:

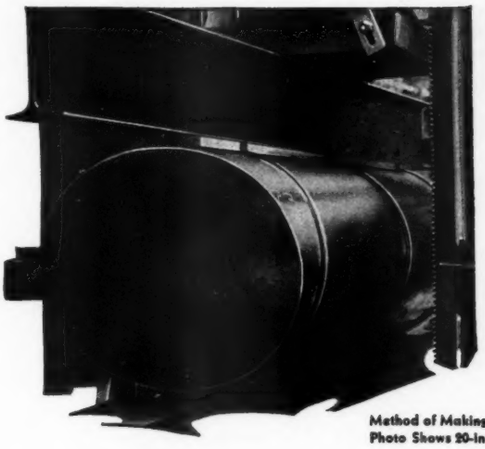
NORTH LOUISIANA	
Caddo, light	8,445
Caddo, heavy	2,740
Homer	3,385
Haynesville	5,115
DeSoto-Red River	2,990
Elm Grove	545
Bellevue	650
Cotton Valley	1,880
Urania	5,360
Pleasant Hill	475
Sarepta-Carterville	2,630
Zwolle	7,050
Holly	905
Total	42,170
Last week	40,275
Increase	1,895
ARKANSAS	
El Dorado	4,100
Smackover, light	4,990
Smackover, heavy	36,375
Stephens	890
Nevada County	1,020
Lisbon	870
Champagnolle	3,580
Bradley	65
Mount Holly	70
Urbana	870
Total	52,840
Last week	52,405
Increase	435
Both states	95,010
Last week	92,680
Increase	2,330

GASOLINE EXPLODES ON BARGE

NEW YORK, Oct. 20.—Two men were killed, two others seriously burned and two towboats and an oil barge destroyed in the State barge canal at Troy, N. Y., today as the result of a gasoline explosion aboard gasoline barge No. 17 owned by the Oil Transfer Co. of New York. The Sun Oil Co.'s tug Sunoco Sun which was close to the scene of the blaze rescued a number of members of the crews of the burned vessels who had succeeded in leaping into the water in time to escape the force of the blast and flames.

SHREVEPORT GEOLOGISTS

The Shreveport, (La.) Geological Society held its annual election of officers October 3 and S. C. Stathers of the Standard Oil Co. of Louisiana was elected president, with C. L. Moody, of the Ohio Oil Co., vice president, and G. W. Schneider of The Texas Company, secretary-treasurer.



Method of Making Crushing Tests.
Photo Shows 20-inch Naylor Pipe.

Authoritative Tests Prove Remarkable Resistance To Crushing Action In LIGHT WEIGHT Naylor Pipe

External crushing tests on Naylor Pipe recently conducted by Professor M. L. Enger and W. M. Lansford at the Materials Testing Laboratory of the University of Illinois show:

Diameter In.	Thickness In.	Load at Yield Point Lb. per Ft.	Vertical Defl. Yield Point In.	Max. Load Lb. per Ft.	Computed Load at Yield Point Without Spiral Joint Lb. per Ft.
6	0.109	4000	0.24	7100	1010
12	0.141	2800	0.45	4200	930
20	0.141	1000	0.45	2000	580

The last column in the table gives the computed load required to stress to the yield point a plain pipe of the same thickness as Naylor Pipe. A comparison of these values with the experimental values obtained on Naylor Pipe brings out clearly the stiffening effect of the Naylor *Spiralweld* lock-seam.

Another feature of Naylor Pipe structure disclosed by these tests is its ability to transmit loads at considerable distances along the length of the pipe due to the flexible *Spiralweld* lock-seam construction. As a result, loads applied to small areas of the pipe would have to reach relatively large values to bring about a collapse of the length which would be affected.

These authoritative tests are indisputable evidence that remarkable resistance to crushing action has always been one of the definite features of *light weight* Naylor Pipe. A fact that Naylor Pipe has demonstrated in the field. Catalog 30-2 gives more complete engineering and metallurgical data.

NAYLOR PIPE COMPANY, Main Office & Plant, 1230 E. 92nd St., CHICAGO

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Mo-lyb-den-um IRON

Maximum Structural Strength With Minimum Weight

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40'0". Ends made to wrought pipe standards for all types of coupling.

Toncan Copper Molybdenum Iron possesses a superior corrosion resistance, making it the favored pipe material.

Where corrosion is not a problem, Naylor Pipe can be furnished in steel.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 50)

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County ..... T. D. 5,043 ft.; drlg.
Hurlbut et al's No. 1 Mrs. D. Chestnut ..... T. D. 2,800 ft.; drlg.
Walter Rawlins' No. 1 P. L. Campbell, C B.&B. Sur. .... T. D. 152 ft.; drlg.
E. S. Price's No. 2 Weiss, 900 ft. due NE of No. 1 Weiss.. Location.
E. S. Price's No. 3 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. ..... T. D. 3,103 ft.; drlg.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Ragley Subd. of C. Miller ranch, Uranga Sur. ..... T. D. 4,390 ft.; showing gas.
Humble and Hurlbut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. ..... T. D. 5,077 ft.; standing.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. ..... Location.
Edwin Jones' No. 3 Rapp, Tuletta Townsite, 630 ft. N line, 508 ft. E line of lease ..... T. D. 4,200 ft.; drlg.
Rowan and Hope's No. 1 Goree, 600 ft. S, 300 ft. W, Lot 4, T. B. Barton Sur. ..... Rigging up.

BEXAR COUNTY

Moore-Jauer's No. 1 Holly R. Ellison ..... T. D. 2,170 ft.; abandoned.
K. M. S. Pet. Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens ..... T. D. 815 ft.; drlg.
J. M. Russell's No. 1 F. L. Price, 1,590 ft. to N line, 660 ft. W line of tract in Angel Navarro Sur. .... T. D. 206 ft.; standing.
J. M. Russell's No. 1 A. O. Miles, 1,600 ft. N line, 600 ft. W line 450-ac. tract, Angel Navarro Sur., 10 miles S from San Antonio ..... T. D. 483 ft.; dropped.
Henry Yelvington et al's No. 1 Beck, 365 ft. from W line, 310 ft. from S line 100-ac. tract, SW cor. of P. W. Hays Sur., 7 miles E from San Antonio ..... T. D. 1,470 ft.; dropped.
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio ..... T. D. 200 ft.; drlg.
August Magel's No. 1 Alvin Beck, 520 ft. from W line, 1,300 ft. from S line of Sur. No. 36 ..... Location.
Penn Oil Co.'s No. 1 Cooksey, 1,150 ft. to E line, 150 ft. to N line of survey, J. Riall Sur. ..... T. D. 1,460 ft.; installing pump.
Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. ..... T. D. 710 ft.; setting csg.
Somerset Syndicate's No. 1 Lagrange, 54 varas from S and W lines of Carrico tract, Sur. No. 48 ..... T. D. 375 ft.; shut down.
I. L. Dingman's No. 2 Cassin, 45 varas from N line, 378 varas from E line, Rodriguez Sur. ..... T. D. 1,200 ft.; drlg.
J. E. Weatherall and Ben C. Hilman's No. 1 Talley ..... Location.
Russell and Moore's No. 2 Mills, 20 ft. S of No. 1, Angel Navarro Sur. ..... T. D. 816 ft.; shows oil.
Bowman and Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. ..... T. D. 1,020 ft.; setting csg.

CALDWELL COUNTY

W. E. Allaun's No. 1 Cosey, SW cor. of tract ..... Location.
W. E. Allaun's No. 2 McKean, 300 ft. W of No. 1 ..... Location.
Batts et al's No. 1 E. P. Roebuck, 1,150 ft. from SE line, 2,400 ft. from NE lines of farm, A. Swift Sur. ..... T. D. 2,595 ft.; drlg.
Gulf Prod. Co.'s (Herts & Thomas) No. 1 Kelley, 1,961 ft. from NE line, 150 ft. from NW line of Kelley tract, J. A. Neil Sur. ..... T. D. 2,488 ft.; dropped.
Cargil et al's No. 1 Thomas, 1,805 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Roberts Sur. ..... Derrick.
Anderson et al's No. 1 S. J. Barber, 300 ft. from SW line, 1,650 ft. from SE line, 392-ac. tract, Squire Damon Sur. ..... T. D. 1,919 ft.; waiting on cement.
Blount and Mills' No. 1 McMahan, 275 ft. from SW line, 75 ft. from SE line of 50-ac. tract, J. Pinchback Sur. ..... T. D. 40 ft.; set csg.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas in the J. D. Tilly Sur. ..... T. D. 5,628 ft.; drlg.

COLORADO COUNTY

Lewis Slagel Drilling Co.'s No. 1 Henderson, 990 ft. from W line, 2,310 ft. from S line, Sec. 1, Blk. 57, T.&P. Sur. ..... Location.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 450 ft.; setting csg.
New Braunfels Oil & Gas Co.'s No. 1 Adolph Seidemann, 269 ft. to NE line, 470 ft. to NW line of farm in the A. M. Esneuricals 11-League Sur., 1 mile SE from New Braunfels ..... T. D. 1,570 ft.; standing.

DEWITT COUNTY

Penn Oil Co.'s No. 1 Junker, center N half 20-ac. tract, Pettus Sur. ..... T. D. 700 ft.; coring.
H. T. Roe's No. 1 Leinhardt ..... T. D. 2,170 ft.; shut down.
A. H. Gibson et al's No. 1 Von Roeder, 750 ft. N line, 200 ft. E line of farm, W. G. Hill League ..... T. D. 1,480 ft.; reinstated; preparing to deepen.

DUVAL COUNTY

Sloan et al's No. 1 Luby, SW cor. of Sur. 593 ..... Location.
S. R. C. Oil Co.'s No. 1 Duval County Land Co., Sur. 280 ..... Spudded; water well.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 6,005 ft.; changing tools.
James Dalgish's No. 2 Peterson, 350 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur.. Location.
James Dalgish-Morrow's No. 1 Peterson, NW cor. Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. ..... T. D. 4,165 ft.; drlg.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hupzor ..... T. D. 2,368 ft.; drlg. plugs.

GOLIAD COUNTY

Union Prod. Co.'s No. 12 George Ray, 2,350 ft. SW of NE line, 330 ft. NW of SE line, George A. Ray 400 ac. in the Wm. Southerland Sur. ..... T. D. 5,134 ft.; dropped.
A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. ..... T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... T. D. 2,503 ft.; drlg.
T. B. Slick's No. 1 Poetter, 1,500 ft. from SW line, 900 ft. from SE line of 591-ac. tract, Obid Marshall Sur. ..... Rigging up.

GONZALES COUNTY

Mardon Oil Co.'s No. 1 Borrer, 150 ft. N and W in the James Stewart Sur., 5 miles NW from Waelder ... T. D. 1,850 ft.; shut down.
Mardon Oil Co.'s No. 1 Robinson ..... T. D. 3,284 ft.; waiting for orders.
United North & South Dev. Co.'s No. 2 Preston, 1,050 ft. NE, 450 ft. NW of upper S or SW cor. of Oethkin one-third league, 900 ft. SE of Preston No. 1 .... Location.
A. J. Keiffer et al's No. 1 B. B. Dix, 550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek ..... T. D. 2,816 ft.; coring.
Andibus & Cummings' No. 1 R. D. & J. C. Miller, 522 ft. from S line, 1,000 ft. from E line, Ann Williams Sur. ..... T. D. 1,870 ft.; drlg.
Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. ..... T. D. 2,350 ft.; resumed drlg.

GUADALUPE COUNTY

Guy Lewis' No. 1 Arno Link, 1,500 ft. NE line, 1,155 ft. SE line, Carvajal Sur. ..... T. D. 2,845 ft.; abandoned in sulphur water.
J. S. Suttle's No. 2 A. Baenzinger, 40 ft. E line, 150 ft. S line of tract in the A. O. Mansola Sur., 5½ miles S from Seguin ..... T. D. 1,954 ft.; drlg.
Brown Hinds et al's No. 1 George Altzger, 1,300 ft. from SE line, 1,100 ft. from SW line of 120-ac. tract in A. Mansola Sur. ..... T. D. 1,975 ft.; dropped.
Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. ..... T. D. 900 ft.; shut down.
Miller & Calhoun's No. 1 Lindenberger, 750 ft. from E line, 650 ft. from S line of 250-ac. tract ..... T. D. 1,278 ft.; coring.
Cranfill & Reynolds' No. 1 Meyer, 150 ft. S and E lines 100-ac. tract, J. Canter Sur. ..... T. D. 2,360 ft.; abandoned in sulphur water.
O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. ..... Moving in.
Jones and Erwin's No. 1 O. Forrester, 2,700 ft. from NE cor., 450 ft. from NW line, O. Forrester tract, Pate Sur. ..... T. D. 600 ft.; drlg.
Trinity Drillers' No. 2 White, 1,205 ft. from NE line, 50 ft. from SE line, 166-ac. tract, Miller Sur. .... T. D. 500 ft.; drlg.
Jones and Erwin's No. 1 Hoese, 150 ft. each way out of NE cor. of 200-ac. tract, J. Leal Sur. ..... Spudded.
Adams and Lyles' No. 1 Seligman, 150 ft. from E line, 300 ft. from S line of 462-ac. tract, John King Sur ..... Spudded.

HAYS COUNTY

Hailey & Whittington's No. 1 Heidenrich, Hamphill Sur.. T. D. 735 ft.; shut down.
San Marcos Oil & Gas Co.'s No. 1 A. H. Alford ..... T. D. 513 ft.; waiting on cement.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 ..... T. D. 25 ft.; standing.
Wm. H. Barnhart's No. 1 McCampbell, 450 ft. to W line, 150 ft. to N line, Lot 33, Barnhart Subd., Los Viboritas grant ..... T. D. 2,005 ft.; standing.
E. E. Watts' No. 1 Gomez, 4,200 ft. to N line, 1,400 ft. to E line of Sur. 125 ..... T. D. 1,360 ft.; drlg.
J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A Hinojosa Sur. ..... T. D. 1,000 ft.; drlg.
P. H. Wilson's No. 1 Edds, Sur. No. 210 ..... Location.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Sur. ..... T. D. 2,475 ft.; drlg.

KARNES COUNTY

Clayton & Pierce's No. 1 Barnett in the Alex Hunter Sur., 6 miles N of Karnes City ..... T. D. 5,000 ft.; drlg.
J. F. Morrissey et al's No. 1 Rigsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCouil Sur. .... T. D. 1,785 ft.; standing.
Dr. Hewitt's No. 1 W. E. Porter, 650 ft. from N line, 700 ft. from W line of 416-ac. tract in the Victor Blanco Sur., 8 miles SE from Runge ..... T. D. 2,700 ft.; dropped.
Hurlbut et al's No. 1 Newberry, 450 ft. SE and SW line of Newberry 428-ac. tract, Carlos Martinez Sur. .... T. D. 2,975 ft.; standing.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 1,110 ft.; shut down.
A. S. Mowinkie's No. 1 Katson, 150 ft. from N line, 150 ft. from E line of tract, Sur. No. 724, 9 miles due W of Kendalia ..... T. D. 1,543 ft.; shut down.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 900 ft.; drlg.
Dickinson et al's No. 1 Edmonson, 150 ft. from S line, 350 ft. from W line of tract in the J. O. Blair No. 72 Sur., 1 mile NW from Kendalia ..... T. D. 40 ft.; spudded in and shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 2,290 ft.; drlg.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia ..... T. D. 1,149 ft.; drlg. lime.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line ..... T. D. 705 ft.; fishing.
Permian Oil Co.'s No. 1 Boles, S.A.&M.G. Ry. Sur. No. 542½ ..... T. D. 500 ft.; fishing.
Hardy Sitton's No. 1 McMillan, south central part of 180-ac. lease, B. Williams Sur. ..... Location.
Abercrombie Oil Co. and Harrison Oil Co.'s No. 1 Kunz, 900 ft. from E line, 1,900 ft. from S line of McCormack Sur. ..... Location.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. ..... T. D. 1,920 ft.; drlg.

KLEBERG COUNTY

Bowen & Sarles' No. 1 Robert H. Simmons in the A. Houston Sur. No. 611, Sec. 7, King Subd., 150 ft. out of NW cor. of SW ..... T. D. 1,580 ft.; drlg. shale.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant ..... T. D. 3,290 ft.; drlg.
Mardon Oil Co.'s No. 2 Jim Clamp ..... T. D. 1,389 ft.; standing.
A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur. in the Poindexter-Burns Sur. ..... T. D. 275 ft.; dropped.

KIMBLE COUNTY

Lindley Bros.' No. 1 Anderson, Sec. 178, Mubenger Sur. .. T. D. 990 ft.; dropped.
C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; drlg.

LASALLE COUNTY

Fred W. Vais' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. ..... Spudded.

LAVACA COUNTY

Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Hueser Sur. ..... Building derrick.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridget Fadden Sur., 3 miles E from George West .. T. D. 720 ft.; set csg.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ..... T. D. 1,800 ft.; drlg.
O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 500 ft. from S line in the Ayers Sur. ..... Location.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... Derrick.
Penn Oil Co.'s No. 1 Lyne, 900 ft. to W line, 320 ft. from S line of Sec. 69, on Devonian block ..... T. D. 3,599 ft.; coring.
Sid Keoughan's No. 1 C. E. Terrell, 6,000 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ..... T. D. 800 ft.; drlg.
Tul-Tex Oil Co.'s No. 1 L. Jacobs, 4 miles from N of Callihan Field ..... Rigging up.

LEE COUNTY

Burt et al's (M. D. Rickett) No. 1 R. C. Sanders ..... T. D. 2,910 ft.; drlg. shale.
A. H. Wheeler and associates' No. 1 fee, 14 miles NE from McDade, Blk. 47, Donohoe Sur. ..... T. D. 1,705 ft.; drlg. lime.
J. P. Perry et al's No. 1 W. H. Thomas ..... T. D. 1,210 ft.; drlg. shale.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 632 ft.; drlg.
Sheree, Brodie and Emick's No. 1 Shiver, Henry Brewer Sur. ..... Spudded and shut down.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 7, I.&G.N. Sur. ..... T. D. 3,475 ft.; standing.
Rycade Oil Corp.'s No. 5 Chittim, 600 ft. W of No. 3 Chittim, 500 ft. E line, 225 ft. from S line of SE Sec. 135, Blk. 7, in the I.&G.N. Sur. ..... T. D. 5,438 ft.; drlg. plugs.

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Points of superiority

No. 11-Non-Fouling Hand Chain Guide

—permits operation of hoist from any angle.

—prevents the chain from riding out of the pockets.

—eliminates fouling, another safety feature.

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BRIDGEPORT, CONNECTICUT.

Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 7,092 ft.; fishing.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... T. D. 1,645 ft.; standing.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 2,167 ft.; moving in heavier rig.
Donaldson Oil & Dev. Co.'s No. 2 Hillenmeyer, James Hillenmeyer No. 25 Sur., 500 ft. to E line of survey, 150 ft. to S line of N half of survey ..... T. D. 200 ft.; dropped.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ..... T. D. 2,530 ft.; drlg.
Lyuko Co.'s No. 1 Medina Valley Irrigation, 2,800 ft. to S line, 2,250 ft. to E line of E. Reisacher Sur. No. 509. T. D. 686 ft.; dropped.
United North & South Dev. Co.'s No. 1 Little, S from D'Hanis and near S line of county ..... T. D. 3,137 ft.; drlg.

MILAM COUNTY

Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... Derrick.
Service Oil & Gas Co.'s No. 1 H. G. Hensiee, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ..... Location.

NUECES COUNTY

Independent Oil & Gas Co.'s No. 1 Baldwin, 330 ft. each way out of NE of the J. C. Russell Subd., Blk. 11, 3 miles W from Corpus Christi ..... T. D. 6,140 ft.; shut down.
Houston Oil Co.'s No. 1 Comstock, 105 ft. N of C of tract.. T. D. 510 ft.; set csg.
H. H. Weinert et al's No. 1 Mohle, 450 ft. S line, 450 ft. W line of Sec. 94 ..... Rigging up.
Houston Oil Co.'s No. 1 Joe Hunter, 607 ft. from W line, 165 ft. from S line, 75-ac. tract, Sec. 591 .... Location.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ..... T. D. 300 ft.; drlg.

SAN PATRICIO COUNTY

J. L. Kennedy's No. 1 McRae, 1,170 ft. NW of the C of the SE line of 500-ac. tract ..... T. D. 2,152 ft.; shut down.
George B Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil Sur., Abstract 211 ..... T. D. 4,020 ft.; shut down.
Saxet Oil Co.'s No. 1 Carroll, 800 ft. N line, 130 ft. to W line, Lot 32-A, Sec. 32 of the fourth subd., Taft farms ..... Moving in tools.
Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ..... T. D. 5,100 ft.; drlg.
G. B. Peterman et al's No. 1 Crow, 150 ft. from S line, 170 ft. from W line of Sec. 24 of the Fulton-Coleman Pasture Lands, J. H. Paul Subd. ..... T. D. 4,096 ft.; shut down.
G. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 3½ miles W from Sinton ..... Location.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 4,067 ft.; shut down.
Cosden Oil Co.'s No. 1 Powell, 330 ft. E line of 36-ac. tract in Sec. 32, Paul Subd., Coleman-Fulton Pasture Lands ..... T. D. 1,325 ft.; drlg.

STARR COUNTY

J. L. Smith's No. 1 Welch, Perdernal Sur. ..... T. D. 1,000 ft.; drlg.
Virginia Oil Co.'s No. 1 Kelsey-Bass, 150 ft. to S line, 1,850 ft. to W line, Blk. 6, Por. 75, Courargo ..... T. D. 373 ft.; rebuilding derrick.

TRAVIS COUNTY

Fox Oil Co.'s No. 1 W. Fuchs ..... T. D. 1,012 ft.; dropped.
Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur. .... T. D. 385 ft.; shut down.

UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,710 ft.; drlg. shale.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde ..... T. D. 1,193 ft.; standing.

VICTORIA COUNTY

The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ..... T. D. 5,208 ft.; testing.

WEBB COUNTY

J. L. Elliott's No. 1 Esperanza Land & Stock Co., 950 ft. from N line, 2,231 ft. E line, Sur. 815 ..... T. D. 1,450 ft.; standing.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigging up.
B. F. Nixon's No. 1 A. Guiterres, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant .... T. D. 50 ft.; standing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 1,550 ft.; coring.
National Oil Co.'s No. 1-A Adams, 150 ft. N of No. 1, Blk. 4, Sec. 11, Adams Subd., Borrego grant ..... T. D. 1,100 ft.; drlg.
National Oil Co. of Delaware's No. 1 Luther, 617 ft. NW line, 96 ft. NE line, Blk. 97, Da Prom Subd., Porcion 6 ..... T. D. 380 ft.; standing.
National Oil Co. of Delaware's No. 2 Luther, 64 ft. NE line, 272 ft. SE line, Blk. 13, Sur. No. 7, Share 8, Borrego grant ..... Same as No. 1-A Adams.
Mackenzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 30 ft.; standing.
F. M. Blair & Son's No. 1 Guiterres, 150 ft. from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ..... T. D. 1,650 ft.; coring.
Lincoln Oil & Gas Co.'s No. 1 Guiterres, Blk. 23, Subd., La Huerta grant ..... T. D. 1,150 ft.; drlg.
J. J. O'Hern's No. 1 S. Benavides, 150 ft. from NW line, 150 ft. from NE line, Blk. 10, Fansler Subd., Villa grant ..... Location.

ZAVALA COUNTY

Ed Anglin's No. 5 Pryor ..... T. D. 1,034 ft.; drlg.
Texas Gas Utilities Co.'s No. 1 Ike T. Pryor, Jr. ..... T. D. 1,211 ft.; tested gas, estimated 20,000,000 ft.
Ed Anglin's No. 6 La Pryor ..... Location.
Carl Cromwell's No. 1 Whitecotton, C of NW Sec. 1, A.P.&M. Sur. ..... Location.
Ed Anglin's No. 1 Matthews, 118 varas from S and W lines of Sec. 4, Blk. 2, I.&G.N. Sur. ..... T. D. 650 ft.; drlg.
Texas Gas Utilities Co.'s No. 2 Pryor, 900 varas W, 1,108 varas S of Anglin's No. 2 Pryor ..... T. D. 901 ft.; drlg. shale.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 1,220 ft. from NE cor., Sur. No. 13 ..... T. D. 3,050 ft.; reinstated; now coring.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 50)

Magnolia Petroleum Co.'s No. 4 Rand Miller, 150 ft. from NW line, 1,350 ft. from NE line of lease, J. B. Alexander Sur. ..... T. D. 2,654 ft.; preparing to complete.
The Texas Company's No. 8-B C. Knoblock, 1,080 ft. from NE line, 150 ft. from SE line of 75-ac. tract, J. R. Robinson Sur. ..... T. D. 2,560 ft.; completing.
The Texas Company's No. 2 Schmidt-Wiley, 450 ft. from E line, 150 ft. from S line of lease ..... Location.
The Texas Company's No. 6-A Knoblock, 750 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur. ..... Location.
The Texas Company's No. 7-A Knoblock, 1,225 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur. ..... Location.
The Texas Company's No. 9-A Knoblock, 450 ft. from NE line, 600 ft. from SE line of lease, Robinson Sur. ..... Location.
The Texas Company's No. 4 Pauline Roamel, 850 ft. from SE line, 450 ft. from SW line of lease, Hodges Sur. ..... Location.
The Texas Company's No. 1 Appling, 180 ft. from S line, 450 ft. E. of NE cor. of Alexander Sur. in the Hodges Sur. ..... Location.
The Texas Company's No. 7 Posey, 300 ft. SW of NE line, 450 ft. from NW line of Posey lease, Robinson Sur. ..... T. D. 47 ft.; spudded.

CHAPMAN POOL—WILLIAMSON COUNTY

W. D. Anderson's No. 6-A T. P. Simmons ..... Rigging up.
W. D. Anderson's No. 7 M. V. Lawrence ..... T. D. 2,242 ft.; shut down.
W. D. Anderson's No. 8 M. V. Lawrence ..... Location.
Bartlett & Wilson's No. 1 R. E. Stewart ..... T. D. 741 ft.; drlg.
E. L. Chapman et al's No. 2-A Sides ..... Rigging up.
J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 ft. from W line, 515 ft. from S line of 27-ac. tract, S. Miller Sur. ..... T. D. 1,462 ft.; drlg.
E. E. Ertel's No. 1 H. Swanson ..... T. D. 1,025 ft.; shut down.
Elliott and Moore's No. 1 A. J. Carlson ..... T. D. 40 ft.; shut down.
F. Fuchs' No. 1 C. D. Johnson ..... T. D. 1,390 ft.; drlg.
McNeal et al's No. 7 Kilgore ..... Skidding derrick.
E. C. Mead's No. 1 Abbott, 100 ft. from N and W lines of 6-ac. tract, S. Miller Sur. ..... T. D. 2,166 ft.; shut down.
Marts et al's No. 1 Ollie Simmons ..... T. D. 1,792 ft.; set csg.
G. Stratton's No. 5 J. C. Abbott, 450 ft. from E line, 150 ft. from S line of 32-ac. tract, S. Miller Sur. .... Spudded.

PETTUS AREA—BEE COUNTY

Buchanan and Karone Oil Co.'s No. 1, Blk. 8, Pettus Townsite, center of the block ..... T. D. 400 ft.; set pipe.
Batex Oil Co.'s No. 2 Burnett, 361 ft. from N line, 900 ft. from E line, John Pace Sur. ..... T. D. 3,888 ft.; plugging back.
Batex Petroleum Co.'s No. 3 Burnett, 360 ft. from N line, 600 ft. from E line of 320-ac. tract, Kerr Sur. ..... Location.
C. R. M. Drilling Co.'s No. 1, Blk. 9, Pettus Townsite, center of block ..... T. D. 2,600 ft.; drlg.
Hawn, Mauldin and Grayburg's No. 1 Copeland, 450 ft. from S line, 150 ft. from E line, 20-ac. tract, Hadley Sur. ..... T. D. 3,507 ft.; drlg.
Houston Oil Co.'s No. 3 Neumann, 600 ft. from S line, 300 ft. from W line, 197-ac. tract, Kerr Sur. ..... T. D. 3,714 ft.; waiting on cement.
Houston Oil Co.'s No. 1, Block 21, Pettus Townsite, center of block ..... T. D. 2,000 ft.; drlg.
Humble Oil & Refining Co.'s No. 8 McKinney, S offset to Blk. 21, Pettus Kerr Sur. ..... T. D. 427 ft.; set csg.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. ..... T. D. 2,880 ft.; drlg. shale.
Moody-Seagraves Producing Co.'s No. 2 McKinney, 3,840 ft. from E line, 450 ft. from S line, McKinney tract, R. C. Ballard Sur. ..... Location.
The Texas Company's No. 2 J. R. Scott, 200 ft. from N line, 150 ft. from W line, J. M. Urango Sur. ..... T. D. 690 ft.; drlg.
The Texas Co.'s No. 3 J. R. Scott, 7,100 ft. from No. 1, SW ..... Location.
Union Producing Co.'s No. 23 Ray, east offset to Blk. 39 of Pettus Townsite ..... T. D. 2,005 ft.; drlg.
Union Producing Co.'s No. 25 Ray, 1,700 ft. from S line, 1,400 ft. from E line of P. Miller Sur. ..... Building derrick.
Union Producing Co.'s No. 26 Ray, 2,500 ft. from S line, 2,000 ft. from E line, P. Miller Sur. ..... Location.
Union Producing Co.'s No. 30 Ray, 1,100 ft. from S line, 600 ft. from W line, W. J. Porter Sur. ..... T. D. 4,173 ft.; dry and abandoned.
Wilson and Hill's No. 1, Blk. 14, Pettus Townsite, center of the block ..... Waiting on permit.
Wilson and Hill's No. 1, Blk. 16, Pettus Townsite, center of the block ..... Ready to spud.

LASSATER POOL—BROOKS COUNTY

Houston Oil Co.'s No. 2 Holbien-Wormser, 2,100 ft. from W line, 200 ft. from S line, Wormser 962-ac. tract, Maguellas grant ..... T. D. 4,384 ft.; drlg.

AGUA DULCE FIELD—NUECES COUNTY

South Texas Production Co.'s No. 2 Ollie Furl, 1,200 ft. NE of No. 1 ..... T. D. 1,986 ft.; setting csg.; gas sand.
South Texas Production Co.'s No. 3 Walter, 800 ft. from S line, 460 ft. from E line of Walters tract in Section 34 ..... T. D. 1,984 ft.; setting csg. to test.

SAXET FIELD—NUECES COUNTY

Saxet Oil & Gas Co.'s No. 2 Donnegan, 2,150 ft. due S of No. 1 Donnegan ..... T. D. 4,528 ft.; cored sand.
Saxet Oil & Gas Co.'s No. 7 Dunn, 2,400 ft. NW and 200 ft. NE of S cor. of Dunn farm ..... Derrick.

WHITE POINT FIELD—SAN PATRICIO COUNTY

Saxet Oil & Gas Co.'s No. 17 Rachel, 150 ft. from N line, 1,000 ft. from E line of 200-ac. tract ..... T. D. 3,146 ft.; drlg. shale.

LION McFADDEN POOL—VICTORIA COUNTY

Houston Oil Co.'s No. 1 McFadden, 330 ft. S and 900 ft. E of SE cor. of survey, L. Mann Sur. ..... T. D. 3,800 ft.; coring shale.
Lion Oil Refining Co.'s No. 2 McFadden, 1,317 ft. W of NE cor. and 512 ft. at right angles from N line of Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. ..... T. D. 6,200 ft.; drlg.

LAREDO DISTRICT

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 ft. from N line, 150 ft. from W line, Sur. 63 ..... T. D. 3,035 ft.; drlg.
F. M. Frasher and R. F. Schoolfield's No. 1 Duval Land Co., 990 ft. from N line, 1,320 ft. from W line, Sur. 123 ..... Location.

RANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 N. Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 ..... Derrick.

S. R. C. POOL—DUVAL COUNTY

S. R. C. Oil Co.-Vacuum Oil Co.'s No. 2 Duval County Ranch Co., 1,050 ft. from E line, 2,050 ft. from N line, Sur. 293 ..... T. D. 1,500 ft.; drlg.

COLE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s (O'Hern & Seacord) No. 3-A Benavides, 330 ft. from SW line, 330 ft. from SE line, Blk. 12, Sur. 174 ..... T. D. 1,838 ft.; pulling liner.

ROMA POOL—STARR COUNTY

The Texas Company's No. 5-A V. C. de Guerra, 675 ft. from N line, 675 ft. from E line, Share 305, Por. 67, Jurisdiction of Mier ..... T. D. 3,436 ft.; drlg.

MID-OJUELOS—WEBB COUNTY

O. W. Killam's No. 1 Garcia, 1,050 ft. from W line, 150 ft. from N line, Block 45, Ojuelos grant ..... Derrick.

REISER POOL—WEBB COUNTY

O. W. Killam's No. 1 Killam (Villegas) on Blk. 4, Sur. 1,879 ..... T. D. 2,440 ft.; coring.

AVIATOR POOL—WEBB COUNTY

O. W. Killam's No. 3 Bruni, 1,050 ft. from E line, 150 ft. from N line, of the N one-half of Sur. 835 .... T. D. 2,402 ft.; abandoned dry.

CABOLINA-TEXAS POOL—WEBB COUNTY

Magnolia Petroleum Co.'s No. 1 Jones-Wright, 330 ft. from S line, 330 ft. from W line, Sur. 674 ..... T. D. 4,890 ft.; drlg. shale.
George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ..... Derrick.

COLE FIELD—WEBB COUNTY

Alamo Drilling & Leasing Co.'s No. 2 Benavides, 660 ft. from N line, 660 ft. from E line, Block 16, Sur. 694.. T. D. 1,200 ft.; drlg.
O. W. Killam's No. 1 Bruni, 200 ft. from NW line, 450 ft. from NE line, Sur. 10 ..... T. D. 2,471 ft.; drlg.

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- Weighs 10 tons complete with any boom attachment.
- 36 h. p. four cylinder motor.
- Efficient machinery deck design.
- Numerous low maintenance features such as
  - —Timken bearing jackshaft
  - —heavy alloy steel shafts and crawler treads
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CHARCO REDONDO POOL—ZAPATA COUNTY

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 ft. from NW line, 330 ft. from NE line, Doty Subd. ..... T. D. 1,220 ft.; drlg.
C. R. Moore and J. W. Moore's No. 2 Adela G. de Flores, 150 ft. from NE line, 150 ft. from SE line, Doty Subd. ..... T. D. 50 ft.; standing.

JENNINGS-MUCKLEROY POOL—ZAPATA COUNTY

Alamo Drilling & Leasing Co.'s (Claggett) No. 6 Trevino, 460 ft. from S line, 150 ft. from E line, Blk. 1, Sur. 66 ..... Location.
Allied Oil & Gas Co.-Allen and Morris' No. 10 Gutierrez, 3,960 ft. from SE line, 150 ft. from NE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 1,299 ft.; comp. for 60 bbls.
Allied Oil & Gas Co.-Allen & Morris' No. 1 Gutierrez, 3,063 ft. from SE line, 150 ft. from NE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 1,289 ft.; waiting on cement.
Edgington & Niles' (Gatlen & Matthews) No. 1 Garza, 150 ft. from S line, 150 ft. from W line, Blk. 18, Sur. 413 ..... T. D. 2,175 ft.; abandoned dry.
Keen and Jackson's No. 1 M. Garza, 150 ft. from NW line, 150 ft. from SW line, Blk. 59, Zorro ranch, Comitas grant ..... T. D. 1,100 ft.; drlg.
K. D. Harrison's No. 1 Pedro de los Santos, 150 ft. from SE line, 150 ft. from NE line of Fansler 52-ac. tract, Share 6, Comitas grant ..... T. D. 1,982 ft.; abandoned.
Nordan and Morris and Grimm and Yakey's No. 1 S. Bustamente, 990 ft. from NE line, 150 ft. from NW line, Share 34, Fansler Partition, Comitas grant ..... Derrick.
W. R. Shankle's No. 6 Gutierres, 1,800 ft. from NE line, 2,989 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Derrick.
W. R. Shankle's No. 7 Gutierrez, 2,100 ft. from NE line, 2,989 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Location.
W. R. Shankle's No. 11 Trevino, 961 ft. from NW line, 150 ft. from SW line, Blk. 15, Sur. 65 ..... T. D. 1,280 ft.; comp. for 100 bbls.
W. R. Shankle's No. 12 Trevino, 1,261 ft. from NW line, 150 ft from SW line, Block 15, Sur. 65 ..... T. D. 1,273 ft.; comp. for 100 bbls.
W. R. Shankle's No. 13 Trevino, 1,561 ft. from NW line, 150 ft. from SW line, Block 15, Sur. 65 ..... T. D. 1,225 ft.; drlg.
W. R. Shankle's No. 14 Trevino, 150 ft. from SW line, 150 ft. from NW line, Block 15, Sur. 65 ..... Location.
S. R. C. Oil Co.'s No. 5-B Cuellar, 450 ft. from NW line, 150 ft. from SW line, Blk. 10, Sur. 65 ..... T. D. 1,234 ft.; comp. for 40 bbls.
S. R. C. Oil Co.'s No. 9-A Cuellar, 450 ft. from NW line, 150 ft. from NE line, Blk. 1, Sur. 65 ..... T. D. 1,029 ft.; waiting on cement.
S. R. C. Oil Co.'s No. 10-A Cuellar, 150 ft. from NW line, 150 ft. from SW line, Blk. 10, Sur. 65 ..... Spudded.
S. R. C. Oil Co.'s No. 1-C Trevino, 150 ft. from NW line, 1,230 ft. from SW cor. of Blk. 14, Cerrito Blanco grant ..... T. D. 1,678 ft.; drlg.
S. R. C. Oil Co.'s No. 9-B Cuellar, 660 ft. from SW line, 150 ft. from SE line, Block 7, Sur. 65 ..... T. D. 200 ft.; drlg.
S. R. C. Oil Co.'s No. 3-C (12-B) Trevino ..... Location.
S. R. C. Oil Co.'s No. 14-B Cuellar, 750 ft. from W line, 150 ft. from S line, Block 13, Sur. 65 ..... T. D. 3,300 ft.; tested salt water.
Whicker, Arnold & Ahler's No. 3 Garza, 150 ft. from SW line, 450 ft. from SE line, Blk. 1, Zorro Ranch Subd., Comitas grant ..... Rigging up.
J. W. Winch's No. 1 Bustamente, 450 ft. from NW line, 150 ft. from NW line, Block 7, Share 5, Fansler Partition, Comitas grant ..... T. D. 1,003 ft.; drlg.

JENNINGS-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 26-A Cuellar, 1,696 ft. from NE line, 4,637 ft. from NW line, Cerrito Blanco grant ..... T. D. 1,730 ft.; abandoned dry.
O. W. Killam's No. 27 Cuellar, 660 ft. from NW line, 1,750 ft. from NE line, Cerrito Blanco grant ..... T. D. 1,464 ft.; waiting on cement.
O. W. Killam's No. 30-B Cuellar, 2,200 ft. from S line, 1,250 ft. from SW line, Sur. No. 277 ..... T. D. 1,570 ft.; waiting on cement.
O. W. Killam's No. 1 R. Lopez, 600 ft. from E line, 475 ft. from S line, Blk. 6, Sur. 71 ..... T. D. 2,295 ft.; drlg. sand.
O. W. Killam's No. 1 Slator, Blk. 1, Slator Pasture, Borrego grant ..... Spudded.
O. W. Killam's No. 31-C Cuellar, 210 ft. from N line, 925 ft. from SW line, Sur. 278 ..... Rigging up.
O. W. Killam's No. 32-B Cuellar, Sur. 277 ..... Location.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 56)

Sun Oil Co.'s No. 16 Bender ..... Derrick.
Sun Oil Co.'s No. 17 Bender ..... Set 44 ft. screen 4,412 ft.; to pump.
Sun Oil Co.'s No. 18 Bender ..... Rig.
Sun Oil Co.'s No. 49 River, north ..... Drlg. shale and lime 4,706 ft.
The Texas Company's No. 2 Atlantic & Gulf, east ..... Comp. flowing 250 bbls. 5,340 ft.
The Texas Company's No. 2 fee ..... Total depth 4,397 ft.; waiting on cement.
The Texas Company's No. 25 House, northeast ..... Set 287 ft. 6-in. screen 4,614 ft.
The Texas Company's No. 43 Stevenson, east ..... Drlg. hard shale and lime 3,685 ft.
Trapshooter Oil Co.'s No. 2 Rosenbaum ..... Drlg. gumbo 950 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 2 Manchester Corp. ..... Rig.
Mike Kouri's No. 1 Jones fee, northwest ..... Total depth 3,840 ft.; sidetracking 2,678 ft.
Moody Corp.'s No. 2-B Whitehead (workover) ..... Comp. flowing 900 bbls. 4,348 ft.
Navarro Oil Co. and Texas Exploration Co.'s No. 29 Dooley ..... Comp. flowing 100 bbls. fluid 80 per cent salt water ¾-in. choke 4,476 ft.
Rio Bravo Oil Co.'s No. 20-A Settegast ..... Drlg. sand 5,435 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 61 Davis ..... Drlg. gumbo 941 ft.
Navarro Oil Co.'s No. 5 Davis ..... Drlg. rock 3,824 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake ..... Fishing stuck drill stem 5,158 ft.
Pure Oil Co.'s No. 12 Lost Lake ..... Rig.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Drlg. rock 5,662 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 92-A Cotton ..... Gas well 630 ft.
Rio Bravo Oil Co.'s No. 92-B Cotton ..... Drlg. sand and shale 154 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Total depth 4,973 ft.; drill stem stuck.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 52 McFaddin (workover) ..... No report.
Yount Lee Oil Co.'s No. 142 McFaddin ..... No report.
Yount Lee Oil Co.'s No. 143 McFaddin ..... No report.
Yount Lee Oil Co.'s No. 144 McFaddin ..... No report.

NORTH DAYTON—LIBERTY COUNTY

Saxet Oil Co.'s No. 2 Davis ..... Drlg. gumbo 3,664 ft.
Saxet Oil Co.'s No. 3 Wilhite ..... Abandoned 5,576 ft.
Harrison and Abercrombie's No. 1 Gulf fee ..... Total depth 4,952 ft.; sidetracked to oil sand 4,762-4,807 ft.; cmtd. 6⅝-in. csg. 4,743 ft.
Harrison and Abercrombie's No. 1 Jones ..... Fishing 4,876 ft.
Harrison Oil Co.'s No. 4 Quintette (workover) ..... Old depth 4,120 ft.; cleaning hole to deepen.

HIGH ISLAND—GALVESTON COUNTY

Gulf Prod. Co.'s No. 10 Smith ..... Drlg. sand 5,239 ft.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 14 O'Brien ..... Drlg. sticky shale 2,864 ft.

ORANGE—ORANGE COUNTY

Gulf Production Co.'s No. 12 Hagen-Moore ..... Drlg.
Orange Petroleum Co.'s No. 13 Chesson ..... Drlg.

BATSON—HARDIN COUNTY

Ada Belle Oil Co.'s No. 143 Sun ..... Temporarily abandoned 1,340 ft.
Paraffine Oil Co.'s No. 14 Mary Ellen ..... Comp. pumping 75 bbls. wtr. and 12 bbls. oil 580 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 25 Moore ..... Tested salt water 4,056 ft.
Gulf Prod. Co.'s No. 26 Moore ..... Drlg. sticky shale and lime 3,848 ft.

HULL—LIBERTY COUNTY

The Texas Company's No. 3 Barrow ..... Setting 13⅜-in. csg. 4,087 ft.

PORT NECHES—ORANGE COUNTY

Gulf Prod. Co.'s No. 1 W. H. Starks ..... Drlg. hard sand 6,456 ft.
The Texas Company's No. 2 Starks ..... Drlg. hard shale and lime 5,612 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 4 Janner ..... Drlg. sand 2,812 ft.
Sun Oil Co.'s No. 1 Freeman ..... Drlg. gumbo 621 ft.
Sun Oil Co.'s No. 1 F. C. Marcus ..... Drlg. 150 ft.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 307 fee ..... Drlg. sand 2,731 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds' No. 6 Davis ..... Drlg. sticky shale 1,072 ft.
Cranfill-Reynolds' No. 9 Esperson ..... Cleaning hole to deepen.
Cranfill-Reynolds Oil Co.'s No. 17 Esperson ..... Drlg. sticky shale 2,877 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Vaydak (workover) ..... Total depth 7,592 ft.; plugged to 3,690 ft.
Yount Lee Oil Co.'s No. 3 Moores Bluff ..... Total depth 7,592 ft.; drlg. sand and shale 7,446 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Ezzell ..... Total depth 4,425 ft.; drlg. sidetracked hole shale and lime 4,384 ft.
Gulf Prod. Co.'s No. 9 Boyt ..... Drlg. sand 3,756 ft.

WEST COLUMBIA—BRAZORIA COUNTY

The Texas Company's No. 80 Hogg (workover) ..... Drlg. hard sand 2,516 ft.

DE WALT—FORT BEND COUNTY

Humble Oil & Ref. Co.'s No. 11 Nelson ..... Drlg. sand and sandy shale 3,365 ft.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Rock 250 ft.

REFUGIO—REFUGIO COUNTY

Benedum & Trees' No. 1 Rooke (workover) ..... Drlg. sand and shale 6,421 ft.
Brookins et al's No. 1 Kay ..... Oil sand 3,705 ft.; cmtd. csg.
Houston Oil Co.'s No. 1 Rooke ..... Drlg. sticky shale 4,903 ft.
Houston Oil Co.'s No. 2-A Fannie Heard ..... Drlg. rock 1,119 ft.
Houston Oil Co.'s No. 1 Doughty ..... Pulling tubing 5,471 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Rigging up to deepen 5,470 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Cem. casing 5,913 ft.
Houston Oil Co.'s No. 1 Rose Lambert ..... Total depth 5,999 ft.; set csg.
Houston Oil Co.'s No. 1-A Rose Lambert ..... Rig abandoned.
Independent Oil & Gas Co.'s No. 1 Rose Lambert ..... Drlg. hard sand 5,820 ft.
Independent Oil & Gas Co.'s No. 6 Jerry Reilly (workover) ..... Sand and shale 7,618 ft.; plugged to gas sand 3,860 ft.
Independent Oil & Gas Co.'s No. 1 Mercy Academy, (workover) ..... Drlg. shale 6,412 ft.
Edwin Jones' No. 1 Mitchell ..... Drlg. gumbo 2,817 ft.
Luling Oil & Gas Co.'s No. 1 Talman, Blk. 104 ..... Drlg. sand and shale 5,457 ft.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Standing 4,928 ft.
Luling Oil & Gas Co.'s No. 1 West ..... No report.
Mission Drilling Co.'s No. 1 Ben Shelton ..... Tested salt water 5,472 ft.; drlg. deeper.
Mission Drilling Co.'s No. 1 Moss-Heard, Blk. 11 ..... Drlg. shale 7,400 ft.
Mission Drilling Co.'s No. 1 O'Brien (workover) ..... Standing 5,471 ft.
Mission Drilling Co.'s No. 1 Joe Shay ..... Drlg. sandy shale 5,479 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney, Blk. 41 ..... Drlg. sand and lime 3,659 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney, Blk. 42 ..... Drlg. shale and lime 5,000 ft.
Moody-Seagraves Prod. Co.'s No. 1 Rooke ..... Total depth 5,930 ft.; recemented 12½-in. casing 5,507 ft.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Sand 5,491-5,500 ft.; set 23 ft. screen; fishing swab.
Moody-Seagraves Prod. Co.'s No. 1 Strauch, Blk. 65 ..... Drlg. sand 6,419 ft.
Moody-Seagraves Prod. Co.'s No. 5 Morgan-O'Connor ..... Drlg. sand and lime 4,904 ft.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor ..... Drlg. gumbo 450 ft.
Nichols Oil Co.'s No. 1 Wood ..... No report.
Ed Price's No. 2 Mission River ..... Standing 3,665 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Royal Oil Co.'s No. 1 Hornburg (workover) ..... Rig up to deepen 6,404 ft.
Well Oil Co.'s No. 2 Terell ..... Dry and abandoned 5,138 ft.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Total depth 3,963 ft.; setting up larger rig.
Saxet Oil Co.'s No. 12 Clint Heard (workover) ..... Total depth 6,442 ft.; fishing 5-242 ft.
Sun Oil Co.'s No. 3 Rea ..... Rig.
L. L. Smith's No. 1 Powers, Blk. 85 ..... Drlg. sticky shale 5,100 ft.
L. L. Smith's No. 1 Rodgers ..... Derrick.
Union Producing Co.'s No. 11 Fannie Heard ..... Rig.
Union Producing Co.'s No. 3 Fox ..... Cemented casing 1,215 ft.
Union Prod. Co.'s No. 5 Powers ..... Drlg. plug 1,258 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Moss ..... Oil sand 5,296-5,307 ft.; cemented 7-in. casing.
Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. sand showing oil 6,599 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 23 Miller ..... Comp. flowing 250 bbls. 90% wtr. 4,370 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Sticky shale 5,181 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 29 Miller ..... Comp. flowing 1,000 bbls. pipe line oil 3,874 ft.
Vacuum Oil Co.'s No. 30 Miller ..... Rig.
Vacuum Oil Co.'s No. 31 Miller ..... Location.
Vacuum Oil Co.'s No. 6 Bayou State ..... Drlg. sand 3,836 ft.
Yount Lee Oil Co.'s No. 1 Miller ..... Drill stem stuck 7,764 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 1 Landry ..... Comp. pumping 90 bbls.
Calcasieu Oil Co.'s No. 1 State ..... Drlg. gumbo and shale 366 ft.
Calcasieu Oil Co.'s No. 21 Watkins ..... Drlg. gumbo and lime 3,380 ft.
The Texas Company's No. 7 State ..... Drlg. heaving shale 4,920 ft.
Yount Lee Oil Co.'s No. 32 State Land ..... Drlg. water sand 3,350 ft.
Yount Lee Oil Co.'s No. 33 State ..... Building derrick.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre Latrielle ..... Drlg. shale 4,881 ft.
Yount Lee Oil Co.'s No. 7 Crowley ..... Junked and abandoned 5,197 ft.

VINTON—CALCASIEU PARISH

Emerson-Moore's No. 1 Gray (workover) ..... Drlg. sand and lime 3,442 ft.
Edgerly Pet. Co.'s No. 2 McLean ..... Drlg. gumbo 3,527 ft.
Gulf Ref. Co.'s No. 2 Gardner (workover) ..... Comp. flowing 500 bbls. oil 3,571 ft.
Gulf Refining Co.'s No. 69 G.&N.G. (workover) ..... Drlg. 2,176 ft.
Gorbat Oil Co.'s No. 1 Clement Lyons ..... Drlg. sand and lime 3,847 ft.
Lucky Ten Oil Co.'s No. 1 Lizzo ..... Shut down 3,326 ft.
Vinton Pet. Co.'s No. 2 Gray (workover) ..... Total depth 3,132 ft.; pulling screen to deepen.
Vinton Petroleum Co.'s No. 10 Gray ..... Drlg. gumbo 2,226 ft.
Wilson-Broach's No. 3 Wilson (workover) ..... Started flowing 2,500 bbls. oil daily 3,624 ft.; sanded.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Fishing drill stem 6,085 ft.
Rycade Oil Corp.'s No. 4 State ..... Drlg. sticky shale 3,422 ft.

STARKS—CALCASIEU PARISH

I. O. Davis' No. 1 Industrial ..... Drlg. hard sand rock 6,156 ft.

J. G. Sutton et al's No. 2 Industrial ..... Abandoned in black sand 2,002 ft.
Pure Oil Co.'s No. 10 Yount Lee ..... Rigging up.

EDGERLY—CALCASIEU PARISH

Associated Oil Co.'s No. 5 Paraffine ..... Comp. pumping 60 bbls. 5% wtr. 3,110 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. shale 2,110 ft.
O'Hara et al's No. 1 Schrader ..... Shut down for fuel 1,794 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. .... Drlg. hard sand 7,195 ft.
The Texas Company's No. 1 J. H. Murdock, Fresno ..... Drlg. shale and lime 3,963 ft.
Mills Bennett Prod. Co.'s No. 1 Random, Allen ..... Total depth 5,363 ft.; abandoned.
Mills Bennett Prod. Co.'s No. 2 Reece, Allen ..... Location.
Mills Bennett Prod. Co.'s No. 2 Random, Allen ..... Location.
Mills Bennett Prod. Co.'s No. 2 Allen ..... Drlg. hard lime 4,543 ft.
Faust et al's No. 5 Faust ..... Drlg. sand 5,441 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ..... Fishing 4,373 ft.
Freeport Sulphur Co.'s No. 1 Seaburn ..... Abandoned in anhydrite 1,850 ft.
Freeport Sulphur Co.'s No. 1 Stratton ..... No report.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Drlg. water sand 1,186 ft.
Rycade Oil Corp.'s No. 2 Seaburn, Stratton Ridge ..... Drlg. gumbo 1,710 ft.
Steel & Strickland's No. 1 Lockbridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Moores, Francis Moore Sur.. Shut down 1,462 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas, J. P. Tilley Sur. .... Drlg. sand 5,858 ft.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Total depth 3,950 ft.; sidetracking 3,906 ft.
Shell Pet. Corp.'s No. 2 Herff, Moss Bluff ..... Drlg. hard lime 4,285 ft.
Pure Oil Co.'s No. 1 J.E.K. Ranch, Oyster Bayou ..... Drlg. gumbo and shale 6,495 ft.

GRIMES COUNTY

Deering et al's No. 1 Munker, Darius Gregg Sur. ..... Shut down 2,595 ft.
Deering & Noble's No. 1 Templeton, 6 miles south of Navasota ..... Drlg. sand and shale 3,312 ft.

HARDIN COUNTY

D. O. Speight's No. 1 fee, near Batson ..... Shut down 3,857 ft.

HARRIS COUNTY

Gulf States Oil Co.'s No. 1 Angsperger ..... Drlg. shale and lime 2,220 ft.
Humble Oil & Ref. Co.'s No. 8 Warren, Hockley ..... Drlg. sand 4,805 ft.
Golden State Oil Co.'s No. 1 McDade, N. Brady Sur..... Drlg. sand and shale 3,386 ft.
W. C. Turnbow et al's No. 1 Miller, Arthur McCormick Sur. ..... Rig.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna .... Gas sand 3,866-70 ft.; cmtd. 6⅝-in. csg. 3,864 ft.
Wright Bros.' No. 2 Lee ..... Drlg. hard lime 3,914 ft.
Warner-Quinlan's No. 1 Hungerford, Henry Smith Sur... Location.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234... Location.
The Texas Company's No. 4 Pipkin, Big Hill ..... Drlg. sand and shale 2,172 ft.

LIBERTY COUNTY

Gulf Prod. Co.'s No. 2 McFaddin, Moss Bluff ..... Sand showing oil 5,813-29 ft.
Hamm et al's No. 1 Harvard, Davis Hill ..... Location.
Humble Oil & Ref. Co.'s No. 1 Breeding, Moss Bluff .. Drlg. shale and boulders 4,472 ft.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff ..... Drlg. sand 5,832 ft.
Humble Oil & Ref. Co.'s No. 1 Sergent, Moss Bluff ..... Drlg. shale and lime 4,514 ft.
Rycade Oil Corp.'s No. 1 Heiskell ..... Drlg. shale 4,877 ft.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott ..... Drlg. sand and lime 2,804 ft.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Total depth 5,374 ft.; cmtd. 9⅝-in csg. 5,370 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe ..... Drlg. gumbo 1,350 ft.
Price & Whitehead's No. 2 Guerges ..... Shut down 2,956 ft.

NACOGDOCHES COUNTY

E. L. Burke et al's No. 1 Latimer, Jose De Los Santos Sur. ..... No report.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Shut down 3,120 ft.

SAN JACINTO COUNTY

E. P. Edwards et al's No. 1 Bennett, northwest of Cold Springs ..... Rig.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 McFaddin, C. O. Edwards Sur. .. Drlg. water sand 4,109 ft.
The Texas Company's No. 1 McFaddin, E. Bonny Sur. ... Drlg. sand 5,394 ft.; to make drill stem test.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Traviers Sur. .. Drlg. shale 6,234 ft.
Newton et al's No. 1 West ..... Shut down 1,550 ft.

WHARTON COUNTY

H. H. Given's No. 1 Hudgins, near Hungerford ..... Abandoned 325 ft.

SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w..... Drlg. clay 146 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Derrick.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.

CAMERON PARISH

Shell Pet. Corp.'s No. 15 Watkins, Black Bayou ..... Drlg. plug 4,366 ft.; to test sandy shale 4,402 ft.
Shell Pet. Corp.'s No. 1 State, Black Bayou ..... Total depth 5,200 ft.; resetting screen 5,175 ft.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 5,240 ft.; sidetracking 4,513 ft.
The Texas Company's No. 6 State, Calcasieu Lake ..... Drlg. cap rock 1,978 ft.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay ..... Location.

IBERVILLE PARISH

Shell Pet. Corp.'s No. 5 Wilbert, White Castle ..... Total depth 5,004 ft.; drlg. sticky shale and lime 3,338 ft.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 8 Wilbert, Bayou Des Glaise..... Salt 3,700 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Drlg. sand 3,630 ft.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue .... Bldg. derrick.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e .. Drlg. sticky shale 5,534 ft.

LA FOURCHE PARISH

The Texas Company's No. 1 L.L.&E., Leesville ..... Drlg. hard sand 5,307 ft.

PLAQUEMINE PARISH

Gulf Ref. Co.'s No. 1 Buras Levee Board ..... Blew out while drlg. 200 ft.; rig lost.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille ..... Set 20-in. csg. 64 ft.
The Texas Company's No. 4 State, Garden Island ..... Fishing drill stem 4,414 ft.
The Texas Company's No. 5 State, Garden Island ..... Location.

ST. MARTIN PARISH

The Texas Company's No. 2 Iberville Land ..... Abandoned in shale 5,012 ft.
The Texas Company's No. 3 Iberville Land ..... Location.
The Texas Company's No. 4 St. Martin, Hager ..... Derrick.
The Texas Company's No. 5 St. Martin, Hager ..... Derrick.

ST. MARY PARISH

The Texas Company's No. 1 South Coast, Sec. 41-14s-10e.. Drlg. sandy shale 7,359 ft.

TERREBONNE PARISH

Louisiana Gas & Fuel Co.'s No. 9 Minor, Houma ..... Trying to pump 1,075 ft.
The Texas Company's No. 1 L.L.&E., Bay St. Elaine ..... Location.
The Texas Company's No. 5 State, Bay St. Elaine ..... Derrick.
The Texas Company's No. 4 State, Caillou Island ..... Location.
The Texas Company's No. 5 State, Caillou Island ..... Drlg. hard sand 5,364 ft.
The Texas Company's No. 3 State, Dog Lake ..... Drlg. sandy shale 4,826 ft.
The Texas Company's No. 4 La. L. & E., Four Isle ..... Drlg. hard sand and lime 5,292 ft.
The Texas Company's No. 2 La. L. & E., Bay Junop ..... Drlg. sandy shale 5,060 ft.
The Texas Company's No. 6 State, Lake Pelto ..... Derrick.
The Texas Company's No. 5 State, Lake Barre ..... Waiting cement to set.
The Texas Company's No. 6 State, Lake Barre ..... Driving piling.
The Texas Company's No. 7 State, Lake Barre ..... Building derrick.
The Texas Company's No. 8 State, Lake Barre ..... Driving piling.

OKLAHOMA FIELDS

(Continued from Page 42)

hours from the pay horizon at 1,498-1,505 feet. The Texas Company's No. 1 Toney, SE cor. SW NW Section 27-2s-7w, is the north offset to the new producer. Another location was announced by Pace and others for No. 3 Dilley, the south offset to the producing well.

Development work in the Stephens County wildcat areas has been resumed after having been delayed by muddy roads. Louis Sikes' No. 2 Blake, NE cor. SW Section 16-1s-8w, a wildcat, was preparing to test a sand at 2,145-57 feet. The test recently showed water and oil after bailing, and it was drilled deeper into the sand. Turner and others' No. 1 Andrews, NW cor. SW SW Section 5-2s-7w, has cemented surface casing at 200 feet and shut down. Harris & McNeill's No. 1 Parker, SE cor. NE SE Section 11-2s-8w, a wildcat between the Comanche and Empire Fields, was drilling at 1,400 feet. Ven-Mex Oil Co.'s No. 4 Neigh, NE cor. NW Section 31-1s-8w, is testing an oil sand at 1,956-66 feet. It is an old producer drilled deeper from 1,600 feet. Empire Oil & Refining Co.'s No. 2 Miller, SE cor. NE NE NE Section 5-2s-8w, is rigging up to drill deeper from 1,650 feet. George Pace and others' No. 1 Ing, SW cor. NE Section 14-1-9w, a wildcat north of the Oil City Pool, was drilling at 1,965 feet.

Oklahoma City Completions

The following wells were completed in the Oklahoma City Pool during the week ending October 18. The muddy condition of the roads has delayed the operation and completion of some of the tests in the main part of the field.

Jack Shaffer's No. 1 Vinita Park, SE cor. NW NW SW, Section 2-11-3w, flowed 620 bbls. the first one and one-half hours and was shut in on account of cutting the connections. The sand was found at 6,224-6,451 feet. Indian Territory Illuminating Oil Co.'s No. 4 Coppenger, NW cor., Section 11-11-3w, made 1,877 bbls. the first 16 hours from sand at 6,325-6,530 feet. Cromwell-Franklin Oil Co.'s No. 31 Trosper Park, NW cor. NE SW, Section 12-11-3w, flowed 3,057 bbls. the first eight hours from sand at 6,245-6,341 feet. Indian Territory Illuminating Oil Co.'s No. 6 Mary Sudik, NE cor. NW SW, Section 31-11-2w, made 6,898 bbls. in eight hours from sand at 6,425-6,630 feet. The gas was estimated at 6,000,000 feet. Oils, Inc.'s No. 1 Moreland, SW cor. NW NE, Section 2-11-3w, flowed 566 bbls. the first hour with 10,000,000 feet of gas a day from sand at 6,205-6,457 feet. Indian Territory Illuminating Oil Co.'s No. 1 Lemon, SW cor. SE, Section 11-11-3w, flowed 917 bbls. in 15½ hours from sand at 6,298-6,580 feet. Cromwell-Franklin Oil Co.'s No. 30 Trosper Park, SE cor. NW NW, Section 12-11-3w, made 1,870 bbls. the first eight hours from sand at 6,234-6,311 feet. Gant-Garvin's No. 1 Olafson, NW cor. SW SW, Section 2-11-3w, made 3,842 bbls. the first eight hours from sand at 6,271-6,533 feet. Phillips Petroleum Co.'s No. 1 Day, NE cor. SW NW, Section 2-11-3w, flowed 1,051 bbls. in 25 minutes with 50,000,000 feet of gas a day from sand at 6,232-6,348 feet. Tom Slick Oil Co. and others' No. 2 Keys, NW cor. NE SW, Section 2-11-3w, flowed 930 bbls. the first eight hours with 10,000,000 feet of gas a day from sand at 6,385-6,570 feet. Indian Territory Illuminating Oil Co.'s No. 1 Lawrence Place, NW cor. NE, Section 15-11-3w, made 1,479 bbls. in one hour with 33,000,000 feet of gas. The sand was found at 6,368-6,550 feet. Sinclair Oil & Gas Co.'s No. 7 School Land 67, NE cor. NW SE, Section 36-11-3w, had 2,500 feet of water and 1,000 feet of oil in the hole from a total depth of 6,763 feet. The test will be drilled deeper. Tom Slick Oil Co.'s No. 1 Rodman, SW cor. NW SW, Section 2-11-3w, flowed 147 bbls. the first three hours and was shut in from sand at 6,223-6,572 feet.

Greater Seminole Production

The production from 18 pools in the Greater Seminole area averaged 215,157 bbls. per day for the week ending October 13. The Seminole Field (12 pools) averaged 148,813 bbls. per day from 1,876 wells for the period. The daily average gauges from the different pools were as follows:

Pool—	Wells.	Bbls.
Little River	371	25,094
E. Little River	85	12,631
Carr City	67	10,308
Maud	135	3,391
Mission	95	7,100
Bowlegs	278	15,220
Earlsboro	284	22,644
S. Earlsboro	27	9,895
E. Earlsboro	156	18,489
Seminole	259	14,606
E. Seminole	33	2,265
Searight	86	7,170
Allen	274	12,991
Asher	26	1,122
Wanette	39	5,729
Konawa	101	18,620
St. Louis	487	23,072
Sasakwa	51	4,810
Total	2,854	215,157

Greater Seminole Shipments

The pipe line shipments from the Greater Seminole area total 196,908 bbls. for the week ending October 13. The daily average shipments from the various pools were as follows:

Company—	Seminole bbls.	Archer, Pearson, St. Louis bbls.	Konawa bbls.
Barnsdall	2,331	.....	.....
Champlin	5,952	.....	478
Continental	None	.....	.....
Consolidated	....	2,881	.....
Cosden	6,866	.....	4,288
Deep Rock	2,605	400	.....
Empire	3,642	.....	.....
Gulf	21,723	1,452	1,377
Independent	....	1,095	.....
Magnolia	6,385	6,618	.....
Oklahoma	23,558	231	135
Prairie	15,505	4,765	3,816
Prod. & Refrs.	771	.....	.....
Pure	3,907	.....	.....
Shell	4,097	208	1,149
Sinclair	28,273	7,175	3,537
Texas	6,800	3,000	2,715
White Oak	1,398	.....	.....
Total	143,798	32,129	17,495
Tank cars	2,743	743	
Grand total	146,541	32,872	

Oklahoma City Oil Shipments

The total shipments from the Oklahoma City area for the week ending October 13 were 639,451 bbls. The daily average shipments by companies were as follows:

Company—	Dy. ave.
Empire	21,503
I. T. I. O.	2,032
Magnolia	9,868
Oklahoma	12,524
Prairie	14,457
Stanolind	21,752
Sinclair to storage	647
Tidal	2,583
Champlin	1,515
Healdton	271
Century	2,212
Gulf State	1,886
Total	91,345

Oklahoma City's Shut-in Production

The initial production of the shut-in wells in the Oklahoma City Field that have been allowed to produce for 24 hours or less as of October 18 was 680,752 bbls. from 182 wells. These wells are now shut in for the proration period. The initial production and the approximate date on which each well will be opened for its regular producing period follow:

I.T.I.O.	No.	Bbls.	Hrs.	Date
Boulevard	1	891	14	10-13
Huffman	1	3,015	..	10-12
R. Hemmer	1	1,340	18	10-20
Ferndale Com.	4	5,966	5	10-20
C. Trosper	4	482	½	10-30
Mid Texas	1	4,864	18	10-30
Coppenger	5	3,465	20	10-20
Starkey	1	716	12	10-30
M. Unsell	3	1,399	14½	10-30
Capshaw	1	740	15⅝	10-23
Habegger	2	3,036	18	10-23
H. W. Jones	3	15,885	18	10-23
B. Johnson	7	1,400	Est.	11- 6
C. Trosper	3	4,000	Est.	11- 6
S. Peterson	7	6,612	22	11- 5
Carrico	2	3,497	16	11- 4
Eacock	1	1,351	16	11- 4
Handel	1	1,824	16	11- 4
S. Peterson	8	4,396	22	11- 4
E. Williams	1	4,132	17	11- 3
Brown	1	3,705	12	11- 3
Johnson	8	581	14	11- 3
M. Sudik	10	24,000	Est.	11- 9
R. Hemmer	2	4,000	Est.	11- 9
Coppenger	6	4,400	Est.	11- 9
Corff	4	941	3	11- 8
Coppenger	7	1,582	15	11- 8
Coppenger	2	515	12	11- 8
Johnson	6	2,358	10¼	11- 8
M. Unsell	4	96	½	11- 7
Mt. Vernon	1	909	16	11- 7
M. Unsell	6	3,666	..	11- 7
Spillman	4	5,451	10¼	11- 7
Precure	2	5,977	18	11- 6
Eacock	2	3,079	..	11- 6
Theimer	6	1,993	..	11- 6
Salsman	5	273	..	11- 6
Phelan Addition	1	2,000	Est.	11-19
E. G. Trosper	4	1,625	5	11-19

(Continued on Next Page)

	No.	Bbls.	Hrs.	Date
Jones Community	4	1,632	16	11-19
L. Jones	12	3,875	16	11-18
M. Knox	4	274	½	11-17
Magnolia Heights	1	3,814	16	11-18
Precure	1	1,393	5	11-18
J. Corff	5	3,827	16	11-18
Frendal Com.	5	3,500	Est.	11-26
Starkey	2	4,202	16	11-26
H. G. Trosper	7	7,200	Est.	11-26
Funk	1	6,036	16	11-26
Sudik	11	16	1¼	11-24
Carrico	3	366	(†)	11-23
Coppenger	3	507	16	11-22
Theimer	7	1,190	14	12- 1
Carrico	5	1,335	15	11-29
Corff	2	812	16	11-28
State Land	8	1,114	2	12-16
H. G. Trosper	5	118	8	12-15
Johnson	1	2,066	16	12-14
Spanagle	1	5,475	7¾	12-12
Lemon	1	2,400	Est.	12-11
Okla. State	7	5,407	16	12-12
Coppenger	8	1,980	14	12-10
M.-K.-T.	3	1,000	Est.	12-10
Lawton	1	1,721	16	12-10
Lawrence Place	2	5,644	16	12- 9
Corff	3	965	16	12- 8
Wheeland	1	4,083	9½	12- 7
Ivanhoe	1	383	½	12- 4
Mary Sudik	6	6,898	8	12-18
Coppenger	4	1,877	16	12-18
W. Franklin:				
Page	2	262	.	10-29
Theimer	11	6,528	1¼	10-30
Lowery	9	8,756	16½	10-26
Wright	3	6,796	10¼	11- 3
Theimer	13	4,098	16	11- 8
Holden	2	2,092	12	11-19
Wright	2	7,000	Est.	11-17
Theimer	10	1,127	13	11-18
Lowery	10	746	1¼	11-18
Theimer	12	3,863	16	11-24
Page	2	2,707	16	11-24
Lowery	11	3,597	16	11-24
Theimer	9	2,987	4	11-22
Birge	1	2,546	16	12- 9
Page	5	6,502	16	12- 8
Theimer-Butterfield	1	1,800	12¼	12- 6
Page-Tucker	1	45	¼	12-20
Cromwell:				
Trosper Park	25	960	2	10-20
Trosper Park	27	187	¼	10-19
Trosper Park	26	6,589	15¼	12- 1
Trosper Park	30	1,870	8	12-19
Trosper Park	31	3,057	8	12-18
Sinclair:				
School Land	5	8,808	6	10-24
Vinci	13	429	16½	11-19
Coline:				
Clauer	14	427	..	11-22
Slick:				
Page	2	1,090	5	10-20
Campbell	1	13,875	8	10-30
Foote	2	464	2	11- 4
Atkinson	1	11,340	18	10-26
Trumbley	1	2,611	18	10-26
Frost Heights	4	4,368	19¾	11- 4
Baker	3	3,155	13	11- 3
Atkinson	2	10,338	18	11- 2
C. C. Frost	1	1,097	9½	11- 9
Houston	1	582	2	11- 8
Moore	1	1,333	14	11- 3
Classen	2	9,644	10½	11- 6
Alexander	2	987	10¼	11- 6
Gleason	1	3,302	16	11-19
Miller	1	2,011	14½	11-19
Danruthers	3	2,026	14	11-19
Frost Heights	3	97	½	11-19
Harrison	1	1,895	16	11-23
Thornton	2	294	24	12- 2
Thornton	1	383	½	12- 2
Classen	3	9,140	4¼	12- 2
Key	1	245	15	11-30
Danruthers	1	740	10½	12-15
Wilson	1	2,231	1	12-12
Classen-Edwards	1	13,933	6½	12- 6
Rodman	1	147	3	12-19
Keys	2	930	8	12-19
Hall & Briscoe:				
Holmes	3	7,201	9	10-20
Holmes	2	4,032	6	10-30
Holmes	5	67,000	Est.	11-18
Lindsey	3	48,000	Est.	11-23
Muller	1	2,260	1½	12- 7
Phillips Pet. Co.:				
Carey	1	135	1	11-29
Carey	1	2,400	Est.	11-26
Velt	1	5,705	10¼	12-14
Day	1	1,051	½	12-19
Prairie:				
Sigmon	5	4,240	6	10-30
Sigmon	7	2,565	16½	10-24
Sigmon	6	2,070	4	11- 5
Sigmon	2	2,580	4	11- 8
Sigmon	3	1,595	16	12- 5
Plains & Denver:				
Sadler	1	450	1¼	11-19
Schillings	1	6,500	Est.	11-26
Century Pet. Co.:				
Barr	1	3,933	7¾	11-19
Jefferson	1	535	½	12-14
Independent:				
Harrell	1	1,150	13	11- 2
Lybrand	1	5,495	2¾	12- 1
Julian:				
Hauser	1	3,600	Est.	10-20
Walker	1	2,263	2¼	12- 2
Skelly Oil Co.:				
Dillon	2	4,640	12	10-23
Ainsworth	4	3,645	12	10-30
Tanner	1	2,790	12	11- 3
Ainsworth	3	1,115	11¼	11- 4
Ainsworth	2	1,665	8	11- 4
Tanner	2	17,807	11	11- 9
Dillon	1	1,624	6	12- 9
Hurt	1	5,322	1¾	12- 6
Mabee & Blackstone:				
Harvey	1	675	3	10-25
Schillings	1	28,000	Est.	11-26
Rusty	1	1,807	1¼	11-23
Marco Oil Co.:				
Holder	1	2,600	18	11- 2
Anderson & Prichard:				
Pest House	1	10,165	21	11- 3
Roosevelt	1	10,000	Est.	11- 6
Pest House	2	1,090	2	11-19
Wilson	1	170	4	11-23
Graham	1	1,960	12	11-22
Keys	1	875	3	11-21
Gibson	2	15,000	Est.	11-26
Roosevelt	4	1,974	3	12- 2
Roosevelt	3	6,015	9	12- 1
Orphanage	1	910	12	11-30
Roosevelt	2	6,616	9½	11-29
Habegger	1	335	1	12- 8
Roosevelt	5	375	1½	12- 7
Champlin Oil & Ref.:				
McKeehan	1	4,480	11½	11- 6
Jones & Blackwell O. & G.:				
Towniot	1	10,000	Est.	10-25
Continental Oil Co.:				
Sudik	2	320	..	11-18
Mid-Kansas O. & G.:				
Mollmen	4	3,254	16	11-19
Minnehoma:				
Pugh	1	22,746	9	11-23
Blackwell:				
Clemen	1	3,080	16½	11-25
Gant & Garvin:				
Harris	1	2,210	19½	11-30
Olafson	1	3,842	8	12-19
Oil, Inc.:				
Ross	1	13,200	3½	12-11
Moreland	1	566	1	12-19
Jack Shaffer:				
Vinita Park	1	620	1¼	12-15
British-American:				
Eckroat	1	5,232	1¾	12-20
Total	182	680,752		

*Wells producing from the Silicious lime. All others are producing from the Simpson sand. †Pick up oil.

Carter County

Magnolia Petroleum Co. moved rig material in for No. 1 J. Weis, SW cor. SE SW, Section 19-1s-2w, Tatum Pool. Trevelyn Oil Co. staked location for No. 1 Meeks, SE cor. SW SW, Section 19-1s-2w. J. E. McCarty's No. 1 E. Noble, NW cor. SE SW, Section 14-2s-2w, is a machine. Walter Gant and others' No. 1 Johnson, NW cor. SW SE, Section 17-4s-2w, is a rig. Amos Drilling Co.'s No. 1 Hooks, SE cor. SW SE, Section 13-1s-3w, has been completed for 125 bbls. on the pump from sand 2,131-61 feet and broken sand 2,161-2,217 feet. Trevelyn Oil Co.'s No. 4 Spigner, SE cor. SW NW, Section 24-1s-3w, made 772 bbls. from sand 2,314-2,480 feet. Magnolia Petroleum Co.'s No. 2 W. S. Spigner, SW cor. SE NW, Section 24-1s-3w, has been completed for 966 bbls. in sand 2,276-2,485 feet. No. 3 W. S. Spigner, SE cor. NW, Section 24-1s-3w, made 1,146 bbls. in sand 2,250-2,495 feet. M.G.R. Oil Co.'s No. 1 W. Mitchell, NW cor. SE SE, Section 24-1s-3w, made 779 bbls. from sands 2,241-2,335 feet, 2,335-50 feet and 2,350-80 feet. Walter Gant and others' No. 1 W. Mitchell, NE cor. NW NW, Section 30-1s-2w, has been completed for 1,100 bbls. in sand 2,020-79 feet.

Coal County

Whitney and others' No. 1 Miller, SE cor. NE NE, Section 10-2-8, is drilling at 80 feet.

Hughes County

Mid-Continent Petroleum Corp.'s No. 1 L. Tiger, SE cor. SW NE, Section 9-7-8, flowed 735 bbls. in 16½ hours from Booch sand 2,954-66 feet. Pyramid Drilling Co.'s No. 1 Foster, C SE SE, Section 11-7-8, made 4,500,000 feet of gas from sand 2,950-80 feet. Droppleman & Rogers' No. 1 Brown, NW cor. SE NE, Section 17-7-8, has been completed for 31,000,000 feet of gas in sand 2,918-31 feet. Mid-Continent Petroleum Corp.'s No. 1 Elizabeth, SW cor. NE SW, Section 20-7-8, swabbed 100 bbls. from 3,130 feet after plugging back from 3,250 feet in Cromwell sand.

Marshall County

D. H. Curry's No. 1 J. Ward, NW cor. SW SE, Section 15-5s-6, is drilling at 70 feet. R. L. Keener's No. 1 Barnard, NW cor. NE SW, Section 28-5s-6, is drilling at 500 feet. F. W. Merrick's No. 23 Null, SW cor. NE, Section 24-5s-5, has been abandoned at 739 feet.

Noble County

The Prairie Oil & Gas Co.'s No. 1 Smyser, NE cor. SE, Section 5-20-1w, has been completed for 9,260,000 feet of gas in sand 3,415-27 feet. W. D. Fuggett's No. 1 Reed, SW cor. SE SE, Section 20-24-1w, is cleaning out at 900 feet.

Osage County

Union Oil & Mining Co. and others' No. 1, NW cor. SW NE, Section 32-23-10, is rigging up. Turman Oil Co.'s No. 4, SE cor. SW SW, Section 11-21-8, is a machine rigging up. Oklahoma Natural Gas Corp.'s No. 1,813, SE cor. NW SW, Section 20-21-11, is rigging up. Winona Oil Co.'s No. 7, CNL SE, Section 20-29-9, has been completed for 35 bbls. in Peru sand 1,498-1,526 feet. Vacuum Oil Co.'s No. 6, SE cor. NW SW, Section 28-26-6, made 190 bbls. in 18 hours from Burbank sand 2,905-57 feet.

Pawnee County

P. Adamson, Jr.'s No. 1-A Moore, CEL SE SW, Section 24-21-7, is an old well rigging up to deepen from 1,163 feet. Privett Drilling Co.'s No. 1 Newell, NW cor. SE SW, Section 3-20-6, is rigging up. Doctor Harrington and others' No. 1-A, Keystone Townsite, Lot 30, Block 45, C SE NE, Section 25-20-9, has drilled deeper from 1,000 feet to Bartlesville sand, 1,980-2,025 feet, and is shut down with a hole full of water. Glass and others' No. 1 McCollum, SW cor. SE NW, Section 14-20-9, has been completed for 2,500,000 feet of gas in Layton sand 894-908 feet.

Pontotoc County

Benedum-Trees Oil Co. has the rig up for No. 1 J. Burk, SW cor., Section 28-5-5, Bebee area. Boucher and others' No. 1 Hardin, SW cor. NW NW, Section 31-4-7, has been abandoned at 4,174 feet.

Pottawatomie County

Deep Rock Oil Corp. is erecting the rig for No. 4 Gibson, SE cor. SW NE, Section 23-6-3, West Asher Pool. No. 2 Gibson, NW cor. SW NE, Section 23-6-3, has been completed for 2,473 bbls. in sand 3,416-38 feet. Empire Oil & Refining Co.'s No. 1 Alexander, SW cor. SE, Section 23-6-3, made 165 bbls. from sand 3,417-24 feet, total depth 3,431 feet. H. F. Wilcox Oil & Gas Co.'s No. 6 Warren, NE cor. SW, Section 23-6-3, flowed 1,471 bbls. from sand 3,475-3,500 feet, total depth 3,502 feet. Blackwell Oil & Gas Co.'s No. 1 Fugate, NE cor. NW, Section 26-6-3, has been completed for 100 bbls. in sand 3,467-76 feet. Continental Oil Co.'s No. 1 White, NW cor. NE, Section 26-6-3, made 185 bbls. in sand 3,439-51 feet. The Prairie Oil & Gas Co.'s No. 2 Tomlin, NW cor., Section 23-6-3, has been abandoned at 3,585 feet.

Seminole County

Ramsey Petroleum Co. moved the rig in for No. 2 Davis, NE cor. SE NW, Section 30-8-8. Gypsy Oil Co. made location for No. 4 Harjo, SE cor. NW SW, Section 20-6-6, Konawa Pool. Mid-Continent Petroleum Corp. is building the rig for No. 1 T. Harjo, NE cor. SW SW, Section 20-6-6. Carter Oil Co.'s No. 4 Rogers, SW cor. NW SE, Section 2-8-5, Carr City Pool, has been completed for 520 bbls. in Wilcox sand 4,229-32 feet. The Prairie Oil & Gas Co.'s No. 1 Hyde, SW cor. SE NW, Section 2-8-5, made 1,195 bbls. from Wilcox sand 4,178-95 feet. No. 1 Hassman, SE cor. NE, Section 3-8-5, has been completed for 1,565 bbls. in Wilcox sand 4,149-66 feet. Gypsy Oil Co.'s No. 3 Harjo, SW cor. NE SW, Section 20-6-6, Konawa Pool, has been completed for 1,040 bbls. in sand 2,864-76 feet. Sunray Oil Co.'s No. 2 Mathis, NE cor. SE NE, Section 12-5-7, made 275 bbls. from sand 2,502-12 feet.

Oklahoma County

Scott and others' No. 1 Burss, NW cor. SW SW, Section 2-11-3w, Oklahoma City Pool, is moving in tools. Century Petroleum Co. has the cellar dug for No. 1 Armour, Block 3, Lots 30 and 37, Armourdale Addition, SW cor. NW SW NW, Section 2-11-3w. Anderson & Prichard and Phillips Petroleum Co. made location for No. 1 Westfall, SE cor. NW NE, Section 3-11-3w. Phillips Petroleum Co. staked location for No. 1 Forrester, Block 21, Lots 37 and 38, Walnut Grove Addition, NW cor. SE SE NE, Section 3-11-3w. Blackwell Oil & Gas Co. and Jones Drilling Co. made location for No. 1 Schilling Community, Block 10, Lot 29, Schilling Addition, SE cor. NE NE SW, Section 10-11-3w. Indian Territory Illuminating Oil Co. has the cellar dug for No. 2 Fox, SE cor. NE SW, Section 14-11-3w. Phillips Petroleum Co. made location for No. 1 Winstead, SW cor. SE NE SW, Section 10-11-3w, Block 19, Lot 5, Schilling Addition. Century Petroleum Co.'s No. 1 Wyatt, NE cor. NW NW, Section 2-11-3w, has been completed for 8,688 bbls. in sand 6,280-6,550 feet. J. C. Shaffer's No. 1 Vinita Park, NW cor. SW, Section 2-11-3w, made 5,495 bbls. in eight hours from sand 6,224-6,451 feet. Thomas B. Slick Oil Co. and Atkinson's No. 1 Danruether, SW cor. SE NW, Section 2-11-3w, has been completed for 1,128 bbls. in sand 6,430-6,574 feet. Century Petroleum Co.'s No. 1 Barr, SW cor. SE SE, Section 10-11-3w, made 20,328 bbls. from sand 6,338-6,610 feet. Indian Territory Illuminating Oil Co. and others' No. 4 Coppinger, NW cor., Section 11-11-3w, gauged 1,877 bbls. in 16 hours producing from sand 6,325-6,530 feet. No. 6 Coppinger, NW cor. SW NW, Section 11-11-3w, gauged 2,325 bbls. in 16 hours from sand 6,310-6,547 feet. No. 8 Coppinger, NE cor. NW NW, Section 11-11-3w, made 2,298 bbls. in a 16-hour gauge, producing from sand 6,280-6,488 feet. Cromwell-Franklin Oil Co.'s No. 31 Trosper Park, NW cor. NE SW, Section 12-11-3w, has been completed in sand 6,245-6,341 feet, gauging 3,057 bbls. in eight hours. No. 30 Trosper Park, SE cor. NW NW, Section 13-11-3w, had top sand 6,234 feet, drilled to 6,397 feet and plugged back to 6,317 feet and was completed for 1,870 bbls. in eight hours. Indian Territory Illuminating Oil Co. and others' No. 3 Carrico, SE cor. NW NW, Section 14-11-3w, has been completed in sand 6,280-6,586 feet, gauging 8,591 bbls. in 16 hours. No. 5 Hugh Trosper, SE cor. NW NE, Section 14-11-3w, made 1,118 bbls. on an eight-hour gauge from sand 6,230-6,528 feet. No. 1 Spanagler, NE cor. NW NE, Section 15-11-3w, had sand 6,345-6,488 feet and tested 5,805 bbls. in eight hours. No. 8 Oklahoma State, SW cor. SE NW, Section 36-11-3w, had sand 6,575-6,682 feet, making 6,359 bbls. in eight hours. No. 5 Sudik, SW cor. NE SW, Section 31-11-2w, has been completed for 666 bbls. in sand 6,530-6,700 feet. No. 6 Sudik, NE cor. NW SW, Section 31-11-3w, made 6,898 bbls. in eight hours from sand 6,425-6,630 feet.

Caddo County

Magnolia Petroleum Co.'s No. 5 B. Hedlund, NW cor. NE, Section 11-5-9w, has been completed for 35,000,000 feet of gas in sand 4,518-43 feet.

Creek County

C. O. Buckles and Tulsa Oil Co.'s No. 2 Morgan, NE cor. NW, Section 14-19-9, is rigging up. Beal & Plumb moved the rig in for No. 3 Williby, NE cor. SE NW, Section 26-18-9. O. M. Irelan and others' No. 2 Baker, SE cor. SW, Section 11-17-10, is a rig. Hill Brothers' No. 1-A Berryhill, CWL NW SE, Section 28-17-12, is a machine. Merkle and others' No. 1-A Ellis, C SE NW, Section 31-17-12, is spudding. Turner Brothers and Savoy Oil Co.'s No. 1-A Barnett, NE cor. SE NW, Section 9-16-12, is rigging up. E. A. Smith and W. Krumrie and others made location for No. 1 Marshall, SW cor. NE, Section 30-15-8. J. B. Grieves' No. 1 Dickerson, SE cor. NE NW, Section 4-19-8, is dry and abandoned at 3,352 feet. Hill Brothers' No. 4 Boling, NE cor. SW SW, Section 27-17-12, has been completed for 450,000 feet of gas in sand 1,734-70 feet. C. G. Tibbens Oil & Gas Co.'s No. 2 White, NW cor. SE NW, Section 6-14-9, has been abandoned at 1,320 feet.

Haskell County

A. W. Ault and others' No. 1 M. Harrison, NW cor. SW SW NE, Section 14-9-19, is drilling at 250 feet.

Kay County

McComas and others' No. 1 Wolf, SW cor. NW SW, Section 6-28-1, has been completed for 500,000 feet of gas in sand at 755 feet after plugging back from 1,820 feet. Continental Oil Co.'s No. 2 Fruits, NE cor., Section 3-25-2w, made 3,000,000 feet of gas from sand 4,425-35 feet after plugging back from 4,705 feet.

Latimer County

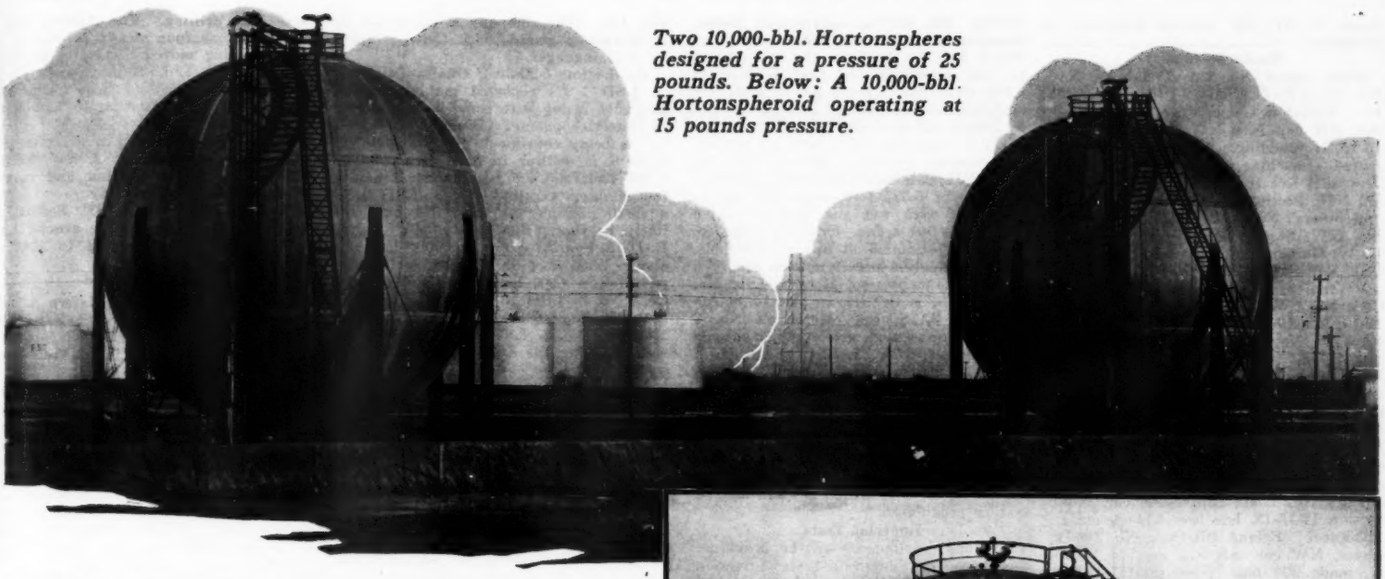
LeFlore County Gas & Electric Co.'s No. RO-14 Morrison, NE cor. SW SE, Section 1-6-22, has been completed for 12,000,000 feet of gas from sand 1,918-2,196 feet.

Lincoln County

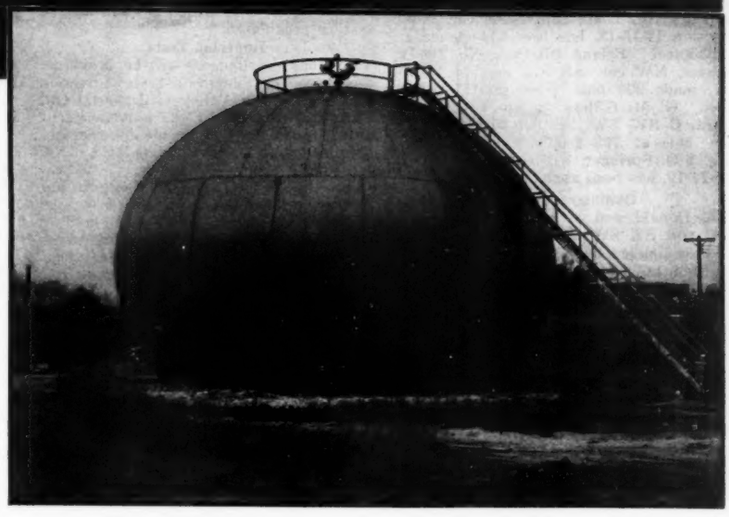
Atlantic Oil Producing Co. staked location for No. 1 Beebe, SW cor. NE SW, Section 8-13-6.

McIntosh County

Deep Fork Oil Co.'s No. 2 M. Wil-



Two 10,000-bbl. Hortonspheres designed for a pressure of 25 pounds. Below: A 10,000-bbl. Hortonspheroid operating at 15 pounds pressure.



HOLDING "wild" gasoline without loss—

Pressure storage in the Hortonsphere stops evaporation of high volatiles

EXTENSIVE service for major oil companies has proved the economy and effectiveness of the Hortonsphere for holding "wild" products under pressure, without loss.

The Hortonsphere, and its companion structure — the Hortonspheroid, reduce both standing storage losses and filling and emptying losses. The difference in application of the two structures lies in the volatility of the products stored.

For high volatiles the spherical container is used, designed for 25 lbs. pressure and over. Naturally standing losses cannot occur unless the vapor pressure exceeds that for which the pressure relief valve is set. Filling and emptying losses are reduced, after the first filling, because gasoline evaporates as the liquid level goes down to keep the vapor space filled. In subsequent fillings, vapor condenses to keep the vapor pressure constant.

With liquids that do not require such high pressure but are still volatile enough to boil at normal temperatures, and which therefore cannot be stored in ordinary tanks without excessive loss, the Hortonspheroid stops evaporation. Its design is based on the natural shape a spherical container takes under internal liquid pressure.

Our nearest office will be glad to supply estimates on Hortonspheres and Hortonspheroids; also on tanks, Wiggins Roofs and all kinds of oil field platework—some of which are listed at the right.

Standard HORTONSPHERE

Capacities:

Capacities	Pressures	Diameters
5,000 bbls.	25 lbs. or	38′0″
7,500 "	over	43′9″
10,000 "		48′0″

Standard HORTONSPHEROID

Capacities:

Capacity in bbls.	Pressure in lbs.
2,500	15
5,000	15
10,000	10 or 15
20,000	10 or 15

OTHER PRODUCTS

Oil Storage Tanks . . Wiggins Roofs . . Hortonspheres . . Rundown Tanks . . . Cylindrical Tanks . . Elevated Tanks . . . Standpipes . . . Pressure Tanks . . . Agitators . . . Absorbers . . . Bubble Towers . . . Condenser Boxes . . . Crude Stills . . . Refinery Equipment . . . . Tank Cars . . . . Smokestacks . . . Gas Holders.

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Tulsa...2406 Exchange Bank Bldg. Cleveland..2204 Midland Bank Bldg. Seattle.....4323 Smith Tower
Birmingham..1536 Fiftieth St., N. New York..3147 Hudson Ter. Bldg. Havana, Cuba .....Apartado 2507
Atlanta..2154 Rhodes-Haverty Bldg. Philadelphia...1615 Jefferson Bldg.

OGJ 10-23 Gray

liams, C NE SE, Section 34-12-14, is spudding.

Muskogee County

John Aggas' No. 1-A J. Asbury, NW cor. SE NW, Section 32-16-15, is rigging up. Trylor & Geiger's No. 1-A Thompson, SW cor. NW NW NE, Section 17-15-15, is spudding. Joe Paul and others moved a machine in for No. 1 Muskogee Townsite, Lot 18, Block 31, SE cor. NW SE NW, Section 21-15-18. O. A. Sewell and others' No. 1 P. Stidham, SE cor. SW NW, Section 4-14-17, is rigging up. H. W. Guinan and others' No. 1-A Billy, CSL NW SW, Section 5-14-17, is rigging up. Indian Territory Illuminating Oil Co.'s No. 1 Wilson, SW cor., Section 31-12-19, is drilling at 300 feet. Mack Drilling Co.'s No. 1 C. Rowe, SE cor., Section 27-16-15, is dry and abandoned at 1,211 feet. Babcock Brothers' No. 8 M. Barnett, CSL SW NE, Section 8-15-15, has been completed for 37 bbls. in sand 1,628-34 feet. E. B. Brubbs and others' No. 1 L. Bemo, NE cor. NW NW SE, Section 8-15-18, made 1,000,000 feet of gas in sand 756-71 feet. M. S. Musellem's No. 1 M. Sango, SE cor. NW, Section 17-15-18, has been abandoned at 1,935 feet. Beland Oil Co.'s No. 10 H. James, NW cor. SE SE, Section 18-14-17, made 200 bbls. from sand 1,410-15 feet. G. M. Gillespie's No. 1 C. Sheppard, C SW SW, Section 35-12-19, is a dry hole at 703 feet. T. B. Mathers' No. 1 G. Springer, SW cor. NE, Section 15-11-19, has been abandoned at 975 feet.

Okmulgee County

McDonald and others' No. 1 Brown, NE cor. SE SW, Section 24-16-13, has been completed for 3,000,000 feet of gas in sand 1,608-24 feet. No. 2 Tiger, NE cor. SE SE, Section 24-16-13, made 10,000,000 feet of gas from sand 1,614-30 feet. Rossiter Oil Co.'s No. 6 A. Burgess, NW cor. SE NW, Section 20-12-13, has been completed for 2,000,000 feet of gas in sand 1,109-68 feet. McDonald and others' No. 1 Wolfe, SE cor. NE, Section 24-16-13, topped sand at 1,645 feet and flowed 150 bbls.

Okfuskee County

A. D. Morton has the rig up for No. 3 Grayson, CNL NW SE, Section 23-11-11.

Payne County

Pure Oil Co.'s No. 2 Kennedy, SE cor. NE NW, Section 9-18-5, is a rig. Deep Rock Oil Corp.'s No. 2 Harris, SW cor. NE, Section 9-18-5, has been completed for 5,500,000 feet of gas in sand 2,860-2,906 feet.

Stephens County

Ven-Mex Oil Co. and Mid-Continent Oil Co.'s No. 4 Nigh, NE cor. NW, Section 34-1s-8w, an old well deepened, is testing sand 1,956-66 feet. The Texas Company made location for No. 1 Toney, SE cor. SW NW, Section 27-2s-7w. Pace and others' No. 2 Dilley, NE cor. NW SW, Section 27-2s-7w, has been completed for 216 bbls. in sand 1,498-1,508 feet.

Tulsa County

Mays Drilling Co.'s No. 6 Marshall, CNL NW NE, Section 15-19-15, is drilling at 200 feet. Ohio Oil Co.'s No. 1 Haikey, NE cor. SW SW, Section 33-18-14, has been completed in sand 1,485-1,501 feet for 15 bbls.

Wagoner County

Larsarsky and others' No. 4 Tucker, SW cor. NE NE SW, Section 25-17-16, is drilling at 650 feet. H. L. Jolly moved a machine in for No. 1-A Herrod, NW cor. SE NE, Section 22-16-18. Mays Drilling Co.'s No. 15 Marshall, NE cor. NW NW NE, Section 15-19-15, has been completed for 8 bbls. in sand 1,381-90 feet. J. H. Striker's No. 4 H. Drew, SW cor. SE NE, Section 19-18-16, is dry and abandoned at 838 feet. W. B. Pine's No. 2 Childers, C SW SW, Section 23-18-16, is a dry hole at 958 feet. Western D. & E. Co.'s No. 5 A. Barnett, CWL SW NE, Section 34-18-17, has been completed for 213,000 feet of gas in sand 290-307 feet. C. F. Finefield's No. 9 Vann, NE cor. NW NE SW, Section 22-16-19, has been completed for 7 bbls. in sand 755-70 feet.

CANADIAN FIELDS

(Continued from Page 48)

bbls. a day, which had increased to 470 bbls. before the second separator was installed. The drilling contractors, Boller, Sherman & Boller of Tulsa, carried an 8-inch hole to the lime, the test getting its big production in that horizon at 4,619 feet. East Crest's No. 1, LSD 5-6, same section, is reported making close to 50 bbls. a day from the lime. East Crest's No. 3 is being located in the same section.

In Section 4-19-2w5, Miracle Oils' No. 1, LSD 11, is a commercial producer from the lime at 5,585 feet, some 420 feet in the lime, with wet gas flow estimated 14,000,000 feet a day. Crude naphtha recovery is estimated at around 150 bbls. and a production test is now in progress.

In the same section, Mercury Oils' No. 1, LSD 13, is drilling in the Dalhousie sands at 5,118 feet. Mercury's No. 7 and 5, same section, are working on casing. Mercury's No. 2, LSD 10, which is taking a small production from the lime, will clean out as soon as a rig is available.

In Section 20-19-2w5, Calmont Oils' No. 4, LSD 11, is drilling 161 feet in the lime at 4,986 feet and close to the horizon where No. 2 got big production. Calmont's No. 7, same LSD, is cleaning and testing production.

Imperial Tests

Further development of the Mayland-Southwest Petroleum-East Crest section of South Turner Valley by Imperial Oil, Ltd., is forecasted by the announcement of two new locations made by the Imperial company. Mayland Oil Co.'s No. 5 has been located in Section 17-19-2w5, and cellar is being dug. The location will test out an extension of the area in this section proven by Nos. 1 and 2 wells, both of which are securing satisfactory production from the deep lime. Drilling will be started as soon as the outfit is available from Mayland's No. 3, which is now at 5,850 feet and running 6⅝-inch casing. Mayland's No. 4, NE, Section 17-19-2w5, recently spudded in, is resuming after cementing casing at 215 feet.

The other new test is Southwest Petroleum's No. 2 in Section 8-19-2w5. Location is west of Foothills Oil & Gas Co.'s No. 3 in LSD 16, and is in the same quarter section. Southwest Petroleum Co. controls the entire area of Section 8, and the first well was drilled by Foothills Oil & Gas Co. for a stock consideration. The second test for which cellar is now being dug will spud in about November 1, and drilling will be handled by the Imperial organization, though no announcement has been made as to whether or not the Foothills Oil & Gas Co. will participate. Foothills' No. 3, the only test so far drilled on the Southwest Petroleum acreage, finished at 6,054 feet and was shot; production in September ran around 44 bbls. a day. The new test has been located in the light of information secured from the Mayland, Lowery and East Crest wells on adjacent sections, all of which were good producers.

In Section 20-19-2w5, Home Oil Co.'s No. 6 is drilling at 4,300 feet.

In Section 17-19-2w5, Lowery Petroleum's No. 2 is drilling at 2,581 feet. Southern Lowery's No. 1, LSD 3, Section 9-19-2w5, is making new hole at 4,097 feet. Royalite Oil Co.'s No. 24, LSD 3, Section 29-19-2w5, is drilling at 5,080 feet.

In Central Turner Valley, Royalite Oil Co.'s No. 20, LSD 7, Section 12-20-3w5, is drilling at 4,663 feet. Royalite's No. 25, N half, Section 31-18-2w5, is drilling at 2,538 feet. Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is drilling out cement at 4,940 feet. Royalite Oil Co.'s No. 4, LSD 4, Section 7-20-2w5, is cleaning out to restore production, and milling on iron; this is the original deep lime gusher which for nearly five years averaged 500 bbls. a day or better, with the tools lost in the hole. Royalite's No. 8, LSD 15, Section 12-20-3w5, recently came back into production after drill pipe had been fished out to 2,765 feet.

Central Turner Valley

In the central Turner Valley area, Midfield Oil Co.'s No. 1, LSD 9, Section 1-20-3w5, is in production at 4,260 feet. The first day's test showed 125 bbls., but with an increasing wet gas flow a production up to 250 bbls. looks possible. Production will be delivered to Imperial Oil, Ltd. The company is controlled by a Winnipeg group, with George Nolan as field manager.

In Section 1-20-3w5, Okalta Oils' No. 1, LSD 1, is reported making around 200 bbls. a day with some leakage owing to defective casing. Work on the casing is being continued. Okalta's No. 2, LSD 8, is drilling in hard formation at 4,865 feet, making a little more than a foot a day. Okalta's No. 3, LSD 9, is a small producer at 4,550 feet and will likely be shot. Sioux City Oils' No. 1, LSD 10, is drilling around 5,900 feet and about 1,515 feet in the lime, a depth record for this horizon. McLeod Oil Co.'s No. 5, LSD 15, is reported drilling near the top of the lime at 4,920 feet. McLeod's No. 1, LSD 16, is using chemicals to clear the hole of metal and restore production.

In Section 12-20-3w5, Illinois-Alberta Oils' No. 1, LSD 14, formerly a 100-bbl. producer, has recovered about half the lost drill rods from the hole, which bottoms in the lime at 3,858 feet. New McDougall-Segur Oil Co.'s No. 3, same LSD, is drilling in the belemnite formation above the lime at 5,425 feet. No. 2 which is deepening, is sidetracking lost bit. British Dominion Oil Development Corp.'s No. 3, LSD 6, is drilling below 3,200 feet. Widney Petroleums' No. 1, LSD 11, is drilling at 4,140 feet.

Structure Oil & Gas' No. 1, LSD 7, Section 31-19-2w5, got the lime at 4,731 feet and is drilling at 4,745 feet. Dome Oils' No. 2, LSD 16, Section 36-19-2w5, is drilling at 3,300 feet. Richfield Petroleums' No. 2, LSD 12-13, Section 13-20-3w5, is drilling in the lower Bentons at 1,360 feet. Spooner Oils' No. 4, LSD 14, same section, is drilling in the Dalhousie sand at 4,820 feet.

Drilling in the Foothills

On the North Waite Valley structure, B. F. Lundy Syndicate's No. 1, LSD 5, Section 21-21-4w5, has started drilling.

On the Waite Valley structure, Calgary Development's No. 1, LSD 10, Section 21-19-3w5, has rotary outfit practically rigged up, to deepen from 3,059 feet. This test is being drilled by Imperial Oil, Ltd.

In the Moose Mountain area, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is working at 4,095 feet in hard capping formation overlying the Dalhousie sand.

On the Aldersyde structure, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is drilling below 4,292 feet.

On the Rickert structure, Paramount Oils' No. 1, LSD 2, Section 28-19-4w5, is preparing to resume after cementing casing at 2,200 feet.

On the Herron structure, Herron Petroleum's No. 1, LSD 3, Section 13-22-6w5, is reported drilling in the Fernie shales at 2,550 feet and should get the Madison lime at shallow depth.

In the Monarch area west of Olds, Cartier-Majestic's No. 1, LSD 3, Section 36-31-7w5, is rigging up. The location is a little west of Sundre. Some 8 miles farther west, a syndicate headed by Campbell Hunter has a crew of 30 men building a road to enable them to move in drilling equipment and supplies for a test to be started this fall.

In the Pincher Creek area, Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, on the Mill Creek structure, is at 2,024 feet and running 8-inch casing. On Yarrow Creek, Alberta Gas & Fuel Co.'s No. 4, LSD 16, Section 34-3-30w4, is drilling below 1,700 feet.

Red Coulee Field

On the Alberta end of the Red Coulee international structure, Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, is at 2,000 feet and running casing. Dalco Oil & Gas Co.'s No. 2, LSD 7, Section 19-2-17w4, is at 2,005 feet and working on casing. Celtic Oil Co.'s No. 1, LSD 4, Section 17-1-16w4, is reported at 2,550 feet and still drilling, after passing through the red beds at 2,490 feet. The well has some gas and encountered traces of oil but no commercial production. Dixie Oils' No. 1, LSD 10, Section 7-1-16w4, is drilling. Commonwealth Petroleum's No. 1, Section 3-1-16w4, is reported preparing to move its outfit to the Blood Reserve, where a commercial test will shortly be started, after extensive core drilling. The Alberta end of the field has four steady producers, the output being moved to Coutts by truck. Imperial Oil, Ltd., is preparing to build a pipe line from the field to its tank farm at Coutts, Alberta, to handle the production.

On the Montana end of the structure, Inland Petroleum's No. 2, SW, Section 1-37-4w, is on production and making better than 40 bbls. a day.

Askalta Oils' No. 1, SE, Section 11-3-7w4, is making new hole around 1,400 feet, after running casing to shut off caving.

Ribstone Field

In the Ribstone Field, eastern Alberta, Meridian Oils' No. 3, LSD 4, Section 16-45-1w4, recently cemented on top of a promising oil sand at 1,882 feet, is reported drilling into the sand.

In the vicinity of Carbon, Alberta, Carbon Exploration Co.'s No. 1, LSD 7, Section 18-29-22w4, was last spring carried to 660 feet, encountering a fair gas flow, sufficient to supply the town. Since then the company has secured a further report on the field from Edward Hodgson, and plans a deeper test for oil. The geologist reports that an oil sand may be looked for around 1,600 feet, with further sands at 2,200, 3,200 and 4,500 feet.

Dutch Shell

A report is again in circulation in eastern Canada that the Royal Dutch Shell interests and the Anglo-Persian Oil Co. are planning to actively enter the western Canada field. It is stated that the companies have had field men at work in Alberta since 1928, and that the preliminary investigations have reached a stage to justify commercial drilling, which will be started next spring on an extensive scale.

Northwest Territories

Charles C. Ross, supervisory engineer for the mines section of the federal Department of the Interior, has returned from the Northwest Territories. The only oil operation in progress in the far north, apart from the general exploratory work, is a test being drilled on Hay River, at the west end of Great Slave Lake, by the Atlas Exploration Co. and associated interests. This test is designed primarily to develop crude oil production that can be used in smelting operations, and at the time of Mr. Ross' visit the drilling operations had not been carried to a conclusive depth. The Hay River area was considered a good oil prospect a number of years ago at the time of the Fort Norman excitement; but though a drilling rig was moved in, the test at that time was not carried to any depth.

New Test in Manitoba

Important wildcat operations in the province of Manitoba are being undertaken by Commonwealth Petroleums, Ltd., of Calgary, which has already drilled extensively in the Turner Valley, Milk River and Red Coulee Fields in Alberta. Extensive acreage has been secured in southern Manitoba in an area tested some years ago. The drilling at that time disclosed considerable gas and some oil indications. Commonwealth Petroleums, Ltd., has sent a portable drilling outfit to the acreage, and starting from the location of the original well will carry on extensive structure tests this fall and winter. If the structure testing shows sufficient encouragement, a commercial test will be started in the spring.

There have been a few scattered tests drilled in Manitoba in the past 20 years, but the Commonwealth venture is probably the first testing on a comprehensive scale.

TO SPEAK ON TARIFF

Wirt Franklin, president of the Wirt Franklin Petroleum Corp. and of the Independent Petroleum Association of America, will deliver an address before the Women's National Chamber of Commerce to be held in Tulsa, October 27. The title of the address will be "A Protective Tariff on Oil."

L. HEYDRICK ILL

L. Heydrick, president of the Heydrick Mapping Co. of Wichita Falls, Tex., is ill in a Wichita Falls hospital.

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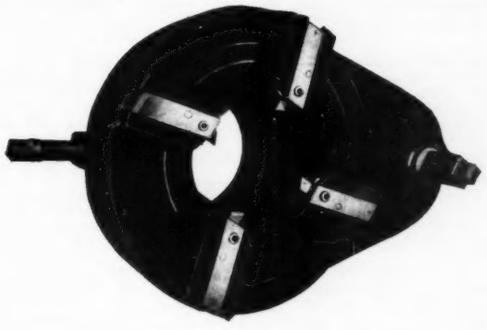

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Settled Refined Market Expected Soon

Reduction in Crude Oil Prices Regarded as Stabilizing Factor. Storage Low Among Chicago Distributors

By John B. Waldo

CHICAGO, Oct. 20.—The demand for furnace oils showed some improvement from the cold snap and indications were that it would force an active demand if the cold were to last for another week. The orders were not for large quantities but were fairly numerous for immediate delivery and prices especially for the light colored distillate and gas oil are very firmly held. The gasoline demand was light. The spot market was freely quoted at 5 cents Group 3 for differential points and an eighth to a quarter more for other unloadings. The major refiners have reduced their gasoline spot quotations one-quarter of a cent, the usual price being 6¼ cents Group 3. Heavy industrial fuel oils were only inquired for in small quantities this being regularly the dullest period of the month. Prices were generally held and some refiners asked 2½ cents additional for their zero oils. In lubricating oil stocks some business is being done. Prices are unsettled, one eastern refinery asking 20 cents for its 30 cold test light stocks. The chilly weather kept many motorists near home and stations report only a fair week-end business.

Stabilizing Prices

The reduction in the posted prices of crude in the Texas fields, it is hoped by many oil men, will result in a settled market at a comparatively early date. The process of price adjustment is rather long and complicated but it finally works out some sort of a mutually workable basis. The storage of the country outside of the refineries, is at a very low ebb. The winter season is approaching when transportation is liable to sudden interruptions. The country dealer should carry more stocks than he has been doing of late, not only of gasoline but of other products especially of furnace oils. Given a sudden cold snap with snow to interrupt transportation and there is every possibility that there might be such a sudden rush of consumer business, and the dealer might find his stock used up with no tanks of additional oil available. The jobber who had the supply on hand would certainly secure the immediate business and get a reputation for servicing the community that would be worth much to him at a later time.

It did seem as if every possible factor was against any good business last week. There was the prevailing uncertainity regarding prices; the weather was too warm for a demand for furnace oils; there was much complaint regarding collections and all things seemed in a conspiracy against the oil man who had anything to sell. The gasoline market was influenced by the lack of demand due in some measure to the caution of the jobber making the purchases and in some measure to the actual lack of consumption. The facts as to the actual consumption are rather slow to be made known but in this territory the individual companies are not doing as much business for the same number of outlets as they did a year ago. The contention is that the number of companies has increased to the extent that the business of the older concerns is held down to practically the same volume as a year back.

Many New Companies

There is a good deal to the statement regarding the increase in number of companies. The list recently issued of amounts paid on account of gasoline tax by the Illinois companies beginning with January this year shows for one thing that the number of concerns who were not in business a year ago is large, a very substantial percentage of the entire list. This report which is copied from the records in the State financial department also shows some most astonishing variations in the amount of tax paid month by month. There is one company whose January payments were on nearly 100,000 gallons which amount decreased by almost exactly 20,000 gallons each month until the final month they paid on only one-fifth as much gasoline as during January. Now State officials are not so dumb as not to notice such changes and institute inquiries into the reason for the change from a large volume during the dullest month of the year to a much smaller quantity on which taxes were paid during the best month of the year.

Gasoline Prices Low

The price of U. S. Motor gasoline last week sagged until it reached the nickel. In fact before the crude decline, some very good U. S. Motor gasoline from North Texas was purchased at 4⅞ cents at the refinery. The North Texas refiners were actively moving for business, some here claiming that the desire to sell, was a matter of necessity owing to the lack of export demand and slack business generally while others saw in the low gasoline prices, the result of low prices paid for crude material. The other refining centers followed the pace set by the North Texas group slowly and reluctantly but they followed nevertheless. The result of so much softness in the refinery prices was the uncertainty of jobbers regarding their own course. The jobber felt that a crude cut was coming and that it would be accompanied by a reduction in the tank wagon scale. Rightly or wrongly the jobber has acted on this assumption, the result being as stated a slow demand and lower quotations. The writer is convinced that the extensive demand for Ethyl Gasoline has been a factor in the price situation by reducing the demand for U. S. Motor fuel. This demand is increasing until it has come to the point that very nearly every oil company in the country is at least considering the sale of Ethyl Gasoline. One of the largest of the integrated companies will announce the last of this month its readiness to supply its customers with Ethyl Gasoline in the major portion of its territory. Another large refinery with wide distribution will probably make the announcement at the same time as it has signed a contract with the Ethyl Gasoline Corp. Another very large organization is reported to be negotiating with the makers of Ethyl fluid for a contract. Each of these concerns has its own brand of antiknock gasoline which each contends is as good, if not better, than Ethyl Gasoline. They have pushed the sale locally yet they are forced to put in Ethyl Gasoline if they want to be able to meet the desires of the patrons and to retain their trade.

Little Demand for High Gravities

The demand for the higher gravities has been so reduced by various factors but chiefly by the Ethyl Gasoline, that the refiners find the demand very slow. Several of the very largest refiners have stocks of 60 Navy or of the full 400 endpoint which they are anxious to move. The material is offered at the price of U. S. Motor gasoline in some cases and at a slight increase in the price in others. Natural gasoline ruled quiet but steady. The Detroit situation attracted much attention in this market last week. The normal price should be 17.8 cents but gasoline was being generally sold at 7 gallons for a dollar, tax included. More than a week ago, most of the independents advanced their price to the full rate and waited for the majors to follow but action was delayed. It is now claimed that the larger companies will advance their price to the public to normal "within 48 hours." If they do not there will be renewed trouble as the independents quote the attorney for a major company as stating that if the bulk of the independents would go up, his company and the other major companies would advance their prices. It is very difficult to maintain an even scale with such wide margins as is evidenced by reductions made by the Standard Oil Co. at several points in the territory during the past week. The procedure is the same as in the recent past, a reduction in the station prices with tank wagon remaining unchanged. The spot prices quoted by the major refiners have been reduced a quarter of a cent on all grades of gasoline and on kerosene but the prices are still above the open market being 6¼ cents for U. S. Motor and up to 7¼ cents for 64-66 375 endpoint. These prices are not expected to bring the refiners quoting them any great amount of orders.

Kerosene Demand Small

The kerosene demand is just about where it has been, small in volume and rather uncertain as to when it might be looked for. There have been rather free offerings from North Texas at less than 3 cents a gallon at the refinery, in fact, one broker has sent out a price of 2¾ cents. The major refiners reduced the price of kerosene with the gasoline reduction, their price being generally 3¼ cents, Group 3. The recent wet spell may bring in some kerosene business as the jobbers have been delaying shipments on kerosene ordered, until the ground had been moistened as they claimed it was too dry for plowing.

Furnace Oils

The furnace oils have been in some demand and have generally held their own better than any other branch of the industry. Prices have shown no decline in spite of the light demand due to the warm weather. Consumption has been light and distributors have found the oil piling up in their tanks until they have been obliged to ask that cars ordered or due for shipment on contracts, be held back until they could make room in their tanks. This condition will be changed quickly if the present colder weather continues long enough to bring in a large number of orders from the public. At any rate, colder weather that is cold enough to make the use of the burner a steady thing all day instead of an hour nights and mornings, is near at hand. This will bring a better movement and test the strength of the situation. The claim is made of shortages of supplies and several refiners who are usually active in supplying the demand are out of the market for anything but contract shipments. Distillates, if prime white of the best quality, is wanted, the price being if aynthing a little higher than kerosene, the market for the distillates being 2⅞ to 3⅛ cents. The distillate must be strictly sweet and have a low flash and endpoint. There is as yet very little call for anything but the best grade although an occasional order is given for the 36-38 gravity.

Gas oils are stronger than distillates if anything, for the straw gas oil is just about as scarce as anything that can be imagined. The price is the same as that mentioned for distillate. Light straw or amber is a little more freely offered and the prices range a little less, say 2¾ to 2⅞ cents and the dark zero gas oil which is priced at 2½ cents upward, although very little can be had that will answer the purpose of a real furnace oil at that price of 2½ cents. All gas oils are of course zero, with a flash below 200 to 220 according to kind or grade and the low endpoint now insisted on by all buyers, of 550 to 600 degrees. The lighter zero fuel oils are also firmly held and many believe that a further advance will take place with the next cold snap, although the cut in crude will have its effect on the fuel oils at least, and possibly on other oils if the cut results in lower prices in other products.

Big Sale of Oil Burners

The association of the manufacturers of oil burners has settled the question of the business being done by the burner makers. They have stated in what may be considered an official statement that in spite of the general slowing down of business the sales of domestic oil burners have been more than 11 per cent larger than for the same period last year and that the directors believe that the total sales for 1930 will exceed by a generous margin the number of oil burners installed last year which was 125,000. This should assure the dealers a little better demand than last year, with the same degree of cold. The winter may be a severe one in which case the sales would be much larger. One reason for the success of the oil burner maker in marketing his product when even the automobile has not been able to approach last year's record is that the coal men are driving customers away by their methods and lack of modern business management. The gas manufacturers have asserted that every buyer of an oil burner was a good prospect for the gas man as they claim that gas has many advantages over oil, as many as oil over coal.

The gas maker's oil or U.G.I. gas oil, is in light demand but some improvement is hoped for with the colder weather. Many of the gas companies are operating on coal and use the water gas which requires the enrichment of oil, for their peak loads. So far there have been no times when the gas companies were favored with a demand which caused them to resort to the making of water gas. The more free use of natural gas is liable to decrease the demand for U.G.I. gas oil. It is probable that a cheap manufactured gas for industrial uses only, will be available to all desirous of using that form of fuel by next spring. While no costs to the users have been announced as yet, some oil men, basing their figures on known costs of the gas in the field and the cost of transportation and of storage, believe that there will be a continuing market for fuel oil at a fair price while others are doubtful of direct competition with natural gas but claim that there are many plants which cannot use gas for one reason or another as well as the railroads which could not use gas if they wished to do so except in a very small way.

Industrial Fuel Oil

The demand for heavy industrial fuel oil remains light. Wholesale dealers report some increase in the demand and are hopeful that the coming of the demand for oil for heating by large concerns whose equipment will enable them to use the heavy oils will aid materially. The price situation is at this writing unsettled by the uncertainty regarding crude prices. There are certain crudes which are natural fuel oils, the best that can be had. If the revision of the price structure is sufficient to make these crudes available for fuel oil in this market there will be an abundant and cheaper supply of fuel oil. Some of the refiners are already beginning to display a little uneasiness regarding the price structure and the cut in crude may result in a general revision of prices but this depends in a great measure on the demand which is also a matter of the weather man. The industrial demand is a little improved but the majority of plants are still operating at but a part of their capacity, in some cases as low as 40 per cent of what they were doing last year

(Continued on Page 126)

Eastern Refined Trade Is Optimistic

Satisfactory Progress in Effort to Prevent Piling Up Burdensome Stocks Big Factor. Expect Improvement Next Year

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Oct. 20.—Refined products markets in East Coast territory have remained in fairly steady position during the past week, and, while no price advances have materialized on principal products, it is evident that a better feeling pervades the market and the trade is looking for an early change for the better.

Refinery statistics for the week ended October 11 showed a setback to the industry's move for reductions in refinery stocks, but this is believed to be but temporary. Gasoline holdings at East Coast refineries as of October 11 totaled 5,364,000 bbls., against 5,182,000 bbls. at the close of the previous week, and stocks of gas and fuel oils showed a slight increase at 11,813,000 bbls. against 11,744,000 bbls. at the end of the preceding week. Curtailment in refinery operations continued, however, with runs for the week ended October 11 amounting to 3,457,000 bbls., against 3,497,000 bbls. during the week ended October 4. Refineries in this area operated to 80.6 per cent of capacity in the week ended October 11, as contrasted with 81.5 per cent in the previous week, and it is expected that a further drop in operations is in sight.

Sentiment in the market continues more optimistic. The satisfactory progress of the industry's curtailment program, and the readjustment of refined products prices to present market conditions have gone far toward correcting unfavorable statistical conditions in the market, and the outlook for continued co-operation of the rank and file in the industry, trade leaders declare, was never better. Oil men will take to the Chicago convention with them next month a more cheerful feeling, based on actual accomplishments, than for several years past.

Consumption of gasoline in East Coast territory showed a sharp decline during the week, it is reported, and this had tended to offset in large measure the curtailed output of eastern refineries. The seasonal drop in consumption, it is pointed out, will necessitate further drastic downward revisions in refinery production schedules, and these cuts are confidently looked for.

While it is a far cry to next spring and summer's motoring season, the eastern industry is already looking ahead to that period, and it is felt that during the coming season the refinery branch of the industry will make a much better showing than during the current year, and that 1931 will show a fair operating return to the refining branch of the petroleum trade.

Gasoline

For the first time in several months, leading refiners are in position to characterize the market position as "steady" without the usual qualifying remarks. The posted price of 7¾ cents per gallon in tank car lots of U. S. Motor gasoline at the refineries is the ruling quotation on the great bulk of current business, and, while there are still a few sellers who are shading this figure, there are likewise marketers of favored brands of gasoline who are obtaining slight premiums over the 7¾-cent figure.

Jobbing demand for motor fuel is showing the usual seasonal slackening, and tank car movement at refineries is slowing down in proportion. Distributors as a rule are not keeping their storage filled, but there is a steady volume of replacement buying going on right along, and, while individual sales are not as large as was the case a few months ago, the aggregate volume reaching refiners is said to be satisfactory for this season of the year.

Gallonage on premium grades of gasoline is steadily increasing, and the premium grades are showing up better in the percentage of sales totals from month to month. Practically all of the new model automobiles are designed for consuming high test fuels, and the 3 or 4 cents per gallon differential charged for the premium grades is not sufficiently large to make the lower gravity gasolines attractive to the average motorist.

There has been a perceptible lessening of price competition in sales in the tank car market, and this tendency is expected to develop further before the end of the year. The barge market is still highly competitive, however, but this branch of the refinery market is in a different position, as barge sales run anywhere from 5,000 to 40,000 gallons at a taking.

Tank Wagon Markets

The tank wagon and service station gasoline markets have not yet been fully readjusted to changed conditions in the refinery situation in the New York and New England territory, and in most sections of this area a hotbed of competition is still apparent. While the large integrated companies are making some effort to adhere to posted price schedules at their own retail stations, this effort is not successful in all instances, and numerous instances of price cutting to meet competition are noted.

In the New York City area, prominent brands of gasoline can be bought at the pump at eight gallons for $1, including the state tax of 2 cents per gallon, although the usual quotation is seven gallons for $1. Premium fuels no longer enjoy immunity from price-cutting activities, and "special sales" of the higher priced gasolines are frequent.

An early general cut of 1 cent per gallon in tank wagon and service station gasoline prices in this territory is looked for by many in the trade, and it is hoped that a reduction of this amount would tend to restore the market to a more stable basis. However, in view of the great multiplicity of stations now operated in the territory, such a theory is believed overoptimistic at the moment.

Consumption of gasoline is falling off, although sales in this area are said to be still running somewhat ahead of comparable 1929 totals with most companies. In a few instances, however, current gallonage is substantially under that reported at this time last year.

Kerosene

Warmer weather has tended to cut into the demand for kerosene in the refinery market this week, and a routine movement was reported. A steady undertone prevails, however, and refiners are holding the market firm at the posted level of 6¾ cents per gallon for 41-43 water white in tank car lots at refinery terminals. Small sellers who had previously been offering oil at 6½ to 6⅝ cents per gallon have in most instances moved their quotation up to the official posted level. While there has been a little talk regarding the possibility of an early mark-up in refinery kerosene here, it is not believed that such a development will materialize in the near future unless a prolonged spell of cold weather should make for an unexpectedly large increase in demand.

Tank wagon sales have likewise eased off during the past week due to unfavorable weather conditions. There were no changes in posted quotations for tank wagon kerosene, and the market is in fairly stable position, having escaped the price-cutting wave which has so demoralized the gasoline tank wagon situation during the past few months.

Lubs

A slightly better feeling is discernible in the cylinder oil trade this week, and sellers here are quoting prices fractionally higher on several grades. Spot 600 steam refined, offered at 16½ cents per gallon last week, is now generally held at a half cent higher, and similar mark-ups have been made on 635 and 650 steam refined, which are quoted at 19 and 23 cents per gallon, respectively. There have been no revisions made in quotations for other cylinder oils during the week, but a firmer undertone is in evidence, reflecting the stronger views of refiners. Liquidation in the field has evidently progressed to the point where surplus holdings have been pretty well cleaned up from weaker holders, and refiners are now determined to get a more equitable return on their sales.

Spot inquiry for cylinder oils has picked up a little, although the trade looks for a continuance of a hand-to-mouth buying policy for the remainder of the year.

Red and pale oils are moving into industrial consuming channels in moderate volume, and prices remain unchanged at previous levels.

Wax

Domestic demand for paraffin wax continued rather sluggish during the week, and the market undertone was still rather soft on fully refined grades. Refinery holdings are still quite heavy, and selling pressure which develops from time to time is instrumental in keeping the market in an unsettled position.

Export interest in both crude scale and fully refined picked up a little during the week, and operators here are looking for an early revival in large lot trading for export. South America and far eastern markets were reported inquiring for wax for shipment during the balance of the year in fair quantities.

Furnace Oils

There was little change noted in this branch of the market. Deliveries against standing contracts had slowed down a little, but this development was looked for by refiners and marketers owing to the fact that deliveries earlier in the month were heavy and weather conditions since that time have not been conducive to heavy consumption.

Prices are well maintained on both the light and heavier grades of domestic burning oil, and the trade looks for a record volume of business during the season which is just getting under way. Despite reports of poor business conditions in other lines, domestic oil burner manufacturers have experienced a heavy volume of new business this fall.

Fuel Oil

Marine consumption of bunker "C" is well maintained, refiners report, and the market is quoted unchanged at $1.05 per barrel in bulk f.o.b. refinery terminals in this area. Industrial demand is picking up, and refiners look for heavier consumption in this division of the market over the next several months.

While the statistical position of the fuel oil market is still weak in the eastern area, as in the remainder of the country, refiners believe that the recent cut of 10 cents per barrel in fuel oil prices at Atlantic and Gulf Coast ports has adjusted the market to changed conditions, and no further price recessions are looked for in the immediate future. Belief that the bunker "C" market has reached bottom at $1.05 is heightened by the definite plans of refiners in this area for further reductions in output of heavy fuel oil.

Diesel Oil

A quiet and steady market is reported with current business going through at the posted level of $2 per barrel in bulk at refinery terminals. Contract movement is well up to expectations, and refiners declare that consumption by marine interests continues to run ahead of comparable 1929 totals.

Domestic consumption of Diesel oil is steadily gaining, and this end of the business is becoming increasingly important as stationary and automotive installations of Diesel engines continue to expand.

Gas Oil

Sales of 28 plus gas oil to gas manufacturing companies have shown further gains during the past week and the market is showing a steadier undertone at 5¼ cents per gallon in bulk at refineries. A little oil can still be had down to 4¾ cents, but the inside price in most instances is now 5 cents per gallon.

While gas oil stocks at eastern refineries are still fairly heavy, refiners believe that heavy consumption of this oil for domestic heating during the winter months will send the market into the spring season in much better statistical position.

Export Market

The export market has gone through another dull week, both at the Gulf and in California. No cargo fixtures of either gasoline or kerosene were reported at either point during the week, and several inquiries from the Continent which had been looked for failed to materialize.

The price cuts on gasoline and kerosene made effective recently by the export association have thus far failed to stimulate export buying, and the trade continues to mark time in anticipation of further developments. While Russia and Rumania are both cutting into foreign markets normally supplied by American refiners to a considerable extent, the extreme quiet in export markets during recent weeks is attributed in large measure to a falling off in consumption abroad, resulting from unfavorable economic conditions.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended October 11 totaled 2,182,000 bbls., a daily average of 311,714 bbls., compared with 1,164,000 bbls., a daily average of 166,286 bbls. for the previous week, and a daily average of 267,821 bbls. for the four weeks ended October 11. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	96,000
Boston	131,000
New York	1,319,000
Philadelphia	307,000
Others	164,000
Total	2,017,000
Daily average	288,143
At Gulf Coast ports—	
Galveston district	125,000
Tampa	40,000
Total	165,000
Daily average	23,571
At all United States ports—	
Total	2,182,000
Daily average	311,714
Daily average four weeks	267,821

Distribution of total imports is as follows:

Crude	1,316,000
Gasoline	298,000
Gas oil	58,000
Fuel oil	510,000

The proposed curtailment of production in Venezuela, if finally made effec-

tive, will effect a corresponding drop in shipments of crude oil into the United States, it is believed.

Petroleum Exports

Export volume has held up fairly well in the local market, a good movement of refined products into export channels being reported for the week ended October 11. The cut in gasoline and kerosene prices at the Gulf has stimulated export inquiry at that point, and the local market for cased products has weakened in conformity with the reduced basis for bulk products at Gulf Coast points. Movement of lubricating oils into foreign market channels is holding up fairly well, cylinder stocks in particular showing a fairly heavy movement. The "Hanseat" cleared New York for French, German and Dutch ports during the week with more than 2,000,000 gallons of lub oils in her cargo.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Oct. 11	Oct. 4	Sept. 27
Gasoline	150,000	625,000	385,000
Naphtha	610,000	475,000	650,000
Kerosene	265,000	150,000	420,000
Fuel oil	12,000	195,000	130,000
Lubricating oil	4,000,000	3,165,000	1,350,000
Petroleum, ref.	2,295,000	2,590,000	1,700,000
	Pounds		
Petrolatum	190,000		35,000
Paraffin wax	2,150,000	2,220,000	1,355,000
Refined	490,000		390,000
Scale	780,000	1,125,000	200,000
Lubricating grease	960,000	1,125,000	850,000

Local operators in the export market have received reports from their foreign connections indicating that both Russia and Rumania are looming up as still more formidable competitors with this country in taking care of the world's petroleum requirements, and add that it is becoming more and more necessary to work extremely "close" to get export business which they have previously enjoyed with a minimum of competition.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended October 11 totaled 372,000 bbls., an average of 53,143 bbls. per day, against 282,000 bbls., or 40,286 bbls. daily in the preceding week, and a daily average of 53,143 bbls. for the four weeks ended October 11. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
New York	262,000
Philadelphia	110,000
Total	372,000
Daily average	53,143
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	372,000
Daily average	53,143

Distribution of total California oil receipts is as follows:

Gasoline	308,000
Gas oil	64,000

Shipments of refined products for Atlantic and Gulf Coast ports during the week (with identity of owner of tanker moving the oil where such owner of record is an oil company) follow:

To New York—96,900 bbls. of gasoline on the Dixie Arrow (Standard Transportation Co.-S.O.N.Y.).

To Philadelphia—115,000 bbls. of gasoline on the Eastern Sun (Sun Oil Co.), and 117,000 bbls. of gasoline on the Sun (Sun Oil Co.).

To Baltimore—78,500 bbls. of gasoline on the Pat Doheny (Richfield).

MICHIGAN FIELDS

(Continued from Page 53)

recently was resumed and oil is now being transported from the well to Vandalia, a distance of about 10 miles, by truck. Here it is loaded into tank cars and shipped to an independent refinery by the Wellman company. New 3-inch tubing was run in the well and it is now pumping about 10 bbls. a day in addition to making enough gas to supply three farm houses within a radius of a quarter of a mile for heating and cooking. The Wellman company is paying the regular Mid-Continent price of $1.15 a barrel for the crude, which is 32 gravity.

Several operators are considering drilling additional wells in the vicinity in an attempt to open a profitable shallow field in this southwest corner of Michigan. The well is only a few miles from the Michigan-Indiana line.

SOUTHWEST TEXAS FIELDS

(Continued from Page 50)

first and outside of the 10,000-acre block in which S.R.C. Oil Co. and Al. Buchanan are interested.

Escobas-Muckleroy

Four oil wells with a total initial production of 300 bbls. were completed in the Escobas-Muckleroy Pool in Zapata County last week, two of them, W. R. Shankle's No. 11 and No. 12 Trevino, were for 100 bbls. each. Allied Oil & Gas Co.'s No. 10 Gutierrez was for 60 bbls. and S.R.C. Oil Co.'s No. 5-B Cuellar was for 40 bbls. All were in the regular sand, one being at 1,249 feet, one at 1,273 feet, one at 1,280 feet and one at 1,299 feet.

Off to the north and a little outside of the proven field by a mile or so Edgington & Niles drilled their No. 1 E. T. Garcia to 2,175 feet and have abandoned it dry. It had traces and showings of oil and gas in some sands but failed to show enough to make a well.

Heavy rains last week delayed things for some days in the entire Laredo district and also elsewhere in Southwest Texas.

KANSAS FIELDS

(Continued from Page 44)

for No. 3 Flook, SE cor. NW, Section 1-20-2w. E. F. Jones and Shell Petroleum Corp. made location for No. 1 Flook, SW cor. NE, Section 1-20-2w. Lario Oil Co. and Shell Petroleum Corp.'s No. 2 Miller, SE cor. NE SE, Section 1-20-2w, is a rig under construction. Phillips Petroleum Co. and others' No. 2 E. Ritz, NW cor., Section 7-20-1w, is a rig. Noble & Simpson and Dixie Oil Co. and others made location for No. 1 Zerger, NW cor. NE SE, Section 16-21-3w. Gypsy Oil Co.'s No. 1 Stucky, SE cor. NE, Section 33-20-3w, has been completed for 330 bbls. in eight hours after deepening from 3,422 feet to 3,443 feet. The Texas Company's No. 3 Munn, NE cor. SE NE, Section 12-20-2w, made 3,352 bbls. from sand 2,975-82 feet. Palmer and Lario and others' No. 1 Ritz, SW cor. NW SW, Section 6-20-1w, made 305 bbls. from chat 2,920-84 feet. McPherson Oil & Gas Development Co. and Shell Petroleum Corp.'s No. 1 Lovett, C NW, Section 13-19-2w, has been completed for 18,000,000 feet of gas in chat 2,914-46 feet. No. 1 Lindberg, C NE, Section 15-19-2w, made 11,115,000 feet of gas from chat 2,926-52 feet. Ben Gurley and others' No. 1 Johnson, SW cor., Section 17-18-2w, has been abandoned at 3,552 feet.

Marion County

Aladdin Petroleum Co. and others' No. 1 Rudolph, NW cor. NE, Section 36-17-3, is a rig.

Morris County

Urshell and other moved a machine in for No. 1 Bersuch, NW cor. SE NW, Section 10-17-7.

Reno County

M. M. Valerius and others' No. 1 Stevens, NE cor. SE NW, Section 6-26-7w, has been abandoned at 4,266 feet.

Rice County

Muth Brothers Drilling Co. moved tools in for No. 1 Beyers, NE cor. NW, Section 21-19-9w. Graham Brothers and Barnsdall Oil Co. made location for No. 1 Turner, NW cor. SW, Section 28-20-10w. Tatlock and others' No. 1 Loesch, SW cor. NW SE, Section 22-20-10w, is dry and abandoned at 3,403 feet.

Rush County

McPherson Oil & Gas Co.'s No. 1 Brock, C NW, Section 24-17-16w, is dry and abandoned at 3,980 feet.

Russell County

Signal Oil Co.'s No. 1 Rude, NE cor. SE SE, Section 28-15-13w, is a cellar. Allison & Fitzwilliams' No. 1 Schwartz, NE cor. NW, Section 8-14-15w, has been abandoned at 3,295 feet.

Saline County

Deitrich and Smocky Hill Oil Co. staked location for No. 1 Sudendorf, NE cor. SE, Section 30-14-2w.

Sedgwick County

Shell Petroleum Corp. has skidded the rig and is rigging up for No. 3-A Lygriss "A," CEL SW SW NE, Section 15-26-2. Stearns & Streeter and others made location for No. 1 Toben, SW cor. SE NE, Section 5-27-2, Eastborough Pool. Magnolia Petroleum Co. made location for No. 3 Wheeler, NE cor., Section 19-27-2. Eisenhour and others' No. 1 Montgomery, NW cor. SW, Section 19-27-2, is rigging up. Bronson and Dixie Oil Co. and others' No. 1 Kinkaid, SE cor. NW NW, Section 4-28-1, is spudding. Shell Petroleum Corp.'s No. 3 Lygrisse "A," SW cor. NE, Section 15-26-2, has been abandoned at 3,071 feet. Magnolia Petroleum Co.'s No. 1 Wheeler, SW cor. SE NE, Section 17-27-2, has been completed for 728 bbls. in chat 2,950-70 feet. Derby Oil Co.'s No. 2 Eastborough, SE cor. SW NE, Section 19-27-2, has been deepened 2 feet and made 1,350 bbls. at 2,993 feet. Vickers Petroleum Co.'s No. 3 Keys, SW cor. NW NE, Section 30-27-2, made 100 bbls. from chat 2,960-87 feet. Six Forty Oil Co.'s No. 1 Braley Airport, SE cor. SW NW, Section 6-28-2, has been abandoned at 3,435 feet.

Stevens County

Western Production Co. is building the rig for No. 2 Ponder, C NW, Section 10-32-38w. No. 1 Dan Sullivan, C NW, Section 34-32-39w, has been completed for 9,000,000 feet of gas in sand 2,579-2,672 feet. Argus Production Co.'s No. 1 W. J. Davis, C SW, Section 31-32-38w, has been completed for 5,000,000 feet of gas in sand 2,514-2,658 feet.

WAR-TIME DESTROYER OF RUMANIAN FIELDS

NEW YORK, Oct. 20.—Sir John Norton Griffiths, Bart., K. C. B., prominent in British oil circles, died at Alexandria, Egypt, late last month, according to reports received here from London. He was governing director of the firm of Norton-Griffiths & Co., Ltd.

Sir John was in charge of the British mission which visited Rumania in 1916 and just before the overrunning of that country by the German army succeeded in destroying petroleum stocks, wells and refineries in that country to prevent these supplies from falling into the hands of Germany, with the assistance of Capt. Thomas S. Masterson, then general manager of the Rumanian Consolidated Oilfields, Ltd., and other British oil men then active in Rumania.

When litigation ensued in the British courts some time later, the London "Petroleum Times" says, upon a claim by the Rumanian Consolidated Oilfields, Ltd. for compensation, "Sir John referred to as the 'angel of destruction' for it was given in evidence that his military mission had wrought destruction to an extent of £56,000,000, while on the testimony of war historians this destructive feat, carried out practically in the face of the incoming German armies, was as good as a battle and an Allied victory."

When the work of rehabilitating the Rumanian petroleum industry was undertaken at the close of the World War, the Phoenix Oil & Transport Co., Ltd., was organized to take over the properties of the Rumanian Consolidated Oilfields, Ltd., Sir John becoming a director of the Phoenix company, holding this position to the time of his death.

CALIFORNIA FIELDS

(Continued from Page 53)

tailment work and are endeavoring to respect established regulations.

Midway-Sunset

The North American Consolidated successfully finished No. 6 Sunset Extension in the Maricopa Flats area of the Midway-Sunset Field of Kern County and this new well, bottomed at 3,138 feet and finished with a 6⅝-inch liner, was brought in doing 300 bbls. of clean 22.1 gravity oil per day. No. 4 Hazelton of the Barnsdall is the next well scheduled for completion in this field and it is quite likely this project will be followed into production by No. 6 Havenstrite of the California Western Oil Co. Drilling operations in the Mount Poso Field of Kern County have been reduced to a negligible factor, although in the Round Mountain Field development work has shown a slight increase during the past few weeks.

Several new wells are scheduled to get under way in the Kettleman Hills Field of Kings County in the very near future unless drilling operations are suspended at the last moment in conformity with the proposed plan of unit development. New wells projected at the present time include No. 1 King of the Union and Amerada Oil Co., No. 2 Whepley of the Associated, No. 3 Felix of the Petroleum Securities, No. 1 Signal of the Richfield Oil Co., No. 2 Huffman of the Superior Oil Co. and the Standard's No. 85 in Section 29-21-17. Additional drilling is also scheduled to get under way in the Belridge Field of Kern County where the Belridge Oil Co. recently proved up the existence of prolific Temblor production. These new wells include No. 1 Fee of the Standard in Section 36-27-20, No. 1 Martin of The Texas Company in Section 22-27-20, No. 1-A Reward of the Associated in Section 34-27-20 and No. 1 Bloemer of the Ohio Oil Co. The Belridge's deep zone discovery produced 2,880 bbls. of unusually clean 46.2 gravity oil and 54,000,000 feet of natural gas during the past 24 hours.

SETTLED REFINED MARKET EXPECTED AT CHICAGO

(Continued from Page 124)

at this time. This is really a good record for the average plant. Of course there are concerns which are doing better but on the other hand there are a great many which are down altogether with no immediate prospects of resumption of active operations. The demand for the heavy oils is running to the heaviest gravities in which the wanted viscosity can be had. Viscosity has become more influential with many of the oil buyers than gravity. For the 18-22 gravity a good zero oil can hardly be bought for less than 55 cents and a really desirable oil of that gravity with a zero cold test and a viscosity of not over 600 degrees is worth more than 55 cents today. The ordinary cold test oil which is usually low in sulphur and has a fairly low viscosity is selling to tank car buyers at not less than 52½ cents. Some oil of this character which is high viscosity or full of free sulphur, might be found right now at 50 cents but the demand for this oil is light. Owing to the scarcity of low cost 18-22 fuel oil, there is a tendency to substitute lower gravities such as the 16-20 or the 14-16 gravities. The prices quoted for these gravities is practically the same as for an 18-22 gravity where the other specifications are the same. The local plants are pretty much sold up at least so they claim and have no oil to sell at present. They are holding for their contracts and if there is a little over, it is being held for a price higher than they can secure right now.

Lubricating Oils

There is little new in lubricating oils. Refiners are now contracting or beginning to contract for next year's requirements by the compounders. The business is slow in getting underway but prices are being shaded by some for orders. The demand for motor oils from the jobbers is fair at best. Industrial lubs are quiet.

WORLD LUBRICATION

"As is shown by the International Petroleum Exposition and Congress at Tulsa, Okla., oil can be a means of enabling nations to rub elbows without causing friction."—Christian Science Monitor.

Manufacture of Natural Gasoline

Rumanian Fields Yield 2,640 Barrels Of Gasoline Daily

The natural gasoline production in Rumania approximates 2,640 bbls. per day, according to a report made by J. Rivers Childs, United States consul at Bucharest. He further discusses the natural gasoline industry there as follows: "The methane content of the gases produced in Rumanian oil fields varies between 64 and 93 per cent, while the gasoline content ranges between 20 and 350 grams per cubic meter of gas. The total casinghead gas output of the Rumanian oil fields is estimated to exceed 529,650,000 cubic feet a day, or about 194,205,000,000 feet a year. The most important centers of casinghead gas supply are Moreni, Ceptura, Boldesta and Runcu, in the district of Prahova, followed by Ochiuri, Gura Ocnitei and Bazvad, in the district of Dambovitza. In 1920 only about 3 per cent of the produced gas was utilized, but there has been a gradual improvement of methods and consumption reached 17 per cent of the total in 1928.

"The gasoline content of casinghead gas generally is recovered prior to the utilization of the gas as a fuel in the refineries, but gas corresponding to many hundreds of tons of crude oil is burnt each day on the Rumanian oil fields without previous removal of gasoline. The total capacity of gasoline-recovery plants installed in Rumania amounts to approximately 2,640 bbls. of gasoline daily, but only about 80 per cent of this capacity is used on account of fluctuations in the supply of gas. Activated charcoal processes are used for about 95 per cent of the total capacity of such plants in Rumania and produce a gasoline with no excessively volatile fractions and therefore suitable for blending. Most of the Rumanian plants are operated on processes of German patent, belonging to the Garbo Union, Frankfort on the Main (I. G. Farbenindustrie, Metallgesel'schaft). Recently, the Steaua Romano installed American gasoline-recovery plants operating by the oil-absorption process.

"As less than 20 per cent of the total amount of gas available in Rumanian fields is now taken, there is still a great potential field and utilization of casinghead gas. Extension of gasoline recovery from this source is also a factor to be considered in the program for improvement of working and production methods, essential for an efficient development of the local industry. In 1929 the Unirea Co. (local subsidiary of the Phoenix Oil & Transport Co. of London) completed a gas-distribution network in the city of Ploesti for household heating. Ploesti is the first town in Rumania to have heat from stripped casinghead gas.

"A much larger proportion of natural gas, both casinghead and methane, is consumed in Rumania for industrial purposes than for lighting and heating, as may be seen from the following figures: For industrial purposes—1925, 7,419,663,000 cubic feet; 1926, 12,281,418,000; 1927, 14,181,343,000; 1928, 20,103,713,000; for lighting and heating—1925, 2,638,681,000 cubic feet; 1926, 1,017,019,000; 1927, 1,321,053,000; 1928, 1,542,129,000."

SHELL MOVES OFFICES

LOS ANGELES, Calif., Oct. 20.—On October 15 the Shell Co. of California transferred its natural gas and natural gasoline department offices from the Wilmington refinery division to the production division in the Higgins Building at Second and Main Streets here. The transfer included A. M. Porter, R. S. Tulin and J. S. Watson and their staff.

STANDARD OFFERS PLANT EMPLOYES NEW PHYSICAL CHEMISTRY COURSE

The Standard Gasoline Co. (Standard Oil Co. of California) is preparing to offer its employes in the natural gasoline department a physical chemistry course. The course will be available to those who have completed the physics course which discussed the fundamental laws of nature, upon which the process of extracting gasoline from natural gas is based. This course was described in the September 5, 1929, issue, page 137, of The Oil and Gas Journal.

The new course which is outlined in the accompanying chart is described in the Booster, official publication of the Standard Gasoline Co., as follows:

"The Standard Gasoline Co. physical chemistry course, which will soon be available to employes, discusses in detail the various phases of gasoline making, and together with the physics course will form a comprehensive and readily understandable reference for information regarding absorption equipment and its operation.

"This new course is not an advanced course in the true sense of the word, its purpose being merely to complete the discussion started in the physics course rather than to go deeper into theoretical principles. In fact it is felt that the physical chemistry course will be found, if anything, less difficult than the preceding one, as it deals almost entirely with the practical equipment with which all employes are already more or less familiar.

"As is explained in the introduction to the course, the subject matter is not meant to be pure physical chemistry, but as everything included falls under the head of either physics, chemistry or physical chemistry, it is felt that the title is justified.

Scope of Lessons

"The first three lessons discuss the physical properties of the constituents of the various mixtures encountered in a gasoline plant, and should make the terms methane, ethane, propane, etc., convey more than just abstract ideas to the plant men. Now that products consisting of relatively pure single hydrocarbons, such as propane and iso-butane, are being manufactured, it is necessary to know the characteristics of these hydrocarbons in order to deal with them. With the increasing importance of fractional analysis of gas and gasoline samples, it is becoming essential to think of these mixtures in terms of their components rather than as 'gas' and 'gasoline.'

"Combustion and corrosion are treated in succession, as they are in some forms related. Heat transfer, which meets us in practically every portion of a gasoline plant, is treated in considerable detail.

"The significance of vapor pressure is discussed as a preparation for the very complete analysis of the operation of a rectifier. A rectifier is one of the most vital pieces of plant equipment, and a complete knowledge of its operation will be found of great benefit to anyone interested in gasoline making, for it is in this piece of equipment that the character of the finished products is ultimately controlled.

"Steam stripping is covered as a process the reverse of that of absorption, and it is shown that the opposite conditions to those required in absorber operation are essential for satisfactory stripper operation.

"Sampling and Gas Testing are the titles of the next two lessons. As it is necessary to continually check over the operation of plant equipment, the importance of sampling and the significance of the various tests are important items in a discussion of the manufacture of natural gasoline.

"The absorption factor and its application to plant operation and control are discussed in a manner which should give the factor more meaning to anyone in a plant.

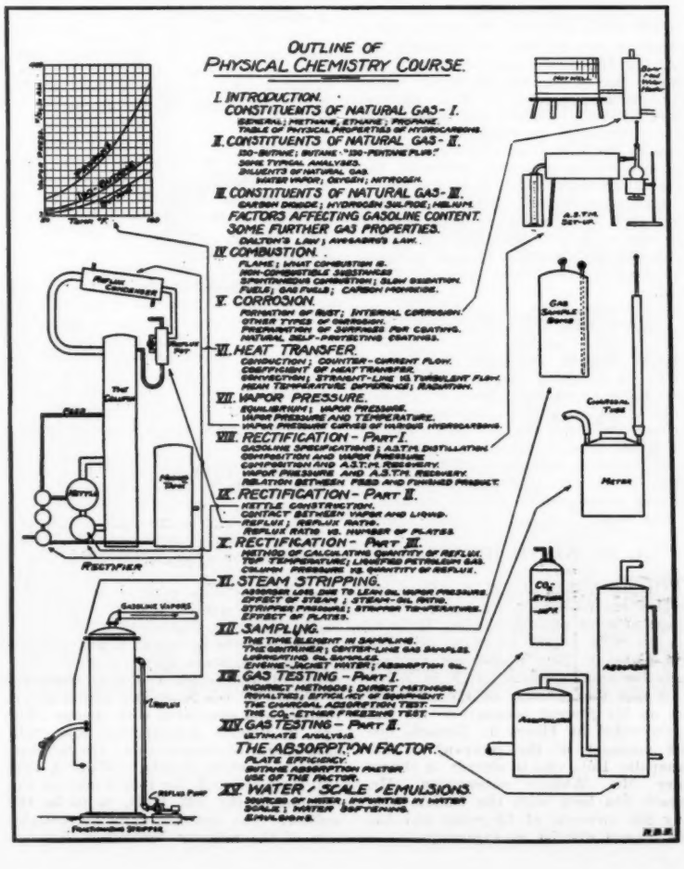
"Water, Scale and Emulsions, with special emphasis on water softening, are the subjects for the final lesson.

"We believe that anyone who completes the 30 lessons of the physics and physical chemistry course will be much better equipped to meet problems which may arise in connection with gasoline plant operation and that by taking these courses a man will be able to provide himself with the desired information in the most direct and thorough manner possible.

"Although the physical chemistry course is complete in itself, it is so intimately tied up with the material in the physics course that in practically all cases only those who have completed the physics course or its equivalent will be eligible to enroll for physical chemistry. This course is composed of 15 lessons, as outlined in the accompanying list of chapter headings, and 30 weeks will be allowed for completion of the work, thus allowing two weeks for each lesson which should be more than ample. Arrangements will be made to take enrollments as soon as the lessons are ready for distribution, at which time a canvas of all prospective students will be made. All plants, offices, etc., will be supplied with enrollment blanks and requests for the course may be submitted at any time to the bureau of education in Los Angeles or through the division office.

"The cost will be $10, and as in the case of the physics course, may be paid by pay roll deduction either in full on the fifteenth of the month following enrollment or in three monthly installments of $5, $2.50, $2.50. Personal check or cash with enrollment is acceptable if any prefer this method of payment to pay roll deduction.

"All lessons will be cleared through the bureau of education in the Los Angeles office where they should be sent as soon as completed."


OUTLINE OF
PHYSICAL CHEMISTRY COURSE.
I. INTRODUCTION.
CONSTITUENTS OF NATURAL GAS - I.
II. CONSTITUENTS OF NATURAL GAS - II.
III. CONSTITUENTS OF NATURAL GAS - III.
FACTORS AFFECTING GASOLINE CONTENT.
SOME FURTHER GAS PROPERTIES.
IV. COMBUSTION.
V. CORROSION.
VI. HEAT TRANSFER.
VII. VAPOR PRESSURE.
VIII. RECTIFICATION - PART I.
IX. RECTIFICATION - PART II.
X. RECTIFICATION - PART III.
XI. STEAM STRIPPING.
XII. SAMPLING.
XIII. GAS TESTING - PART I.
XIV. GAS TESTING - PART II.
THE ABSORPTION FACTOR.
XV. WATER - SCALE - EMULSIONS.

PHILLIPS BUYS PLANE

Purchase of the first Ford tri-motored high speed club plane by the Phillips Petroleum Co. of Bartlesville, Okla., for use of executives in inspection trips in Oklahoma, Texas, Utah, Colorado, Wyoming and Mexico, was announced.

The plane is a veritable aerial yacht. The first of the survey trips is expected to start soon after the delivery of the craft. The executives, headed by Frank Phillips, president, plan to spend two weeks visiting a majority of the company's fields and refineries.

The plane is of the new high speed type capable of more than 150 miles per hour.

BUILDING LOUISIANA PLANT

The Louisiana Gas & Fuel Co. is building a 30,000-gallon gasoline plant in the Sugar Creek Field of Louisiana, near Arcadia, and expects to complete the project within the next 90 days. Construction of the plant and the greater share of the equipment is being supplied by the J. A. Campbell Co., through the Stearns-Rogers Manufacturing Co.

Brief Items for Petroleum Refiners

Submit Questions For A.P.I. Survey As Guide in Future

A survey of the present and prospective economic situation of the petroleum industry with reference to production and consumption of gasoline and crude oil is being made by the American Petroleum Institute. Finds are to be reported at the eleventh annual meeting convening at Chicago November 10. Refiners of the United States have been asked to co-operate in the survey, which will cover the six months' period October 1, 1930, to April 1, 1931, by supplying not later than October 20 data covering estimates of working stocks of gasoline as of April 1, 1931, estimates of actual stocks of gasoline as of the same date and estimates of the total amount of crude oil refiners are planning to run over the six months' period.

A special Committee on Economic Situation, with J. Edgar Pew, Sun Oil Co., Philadelphia, Pa., as chairman, aided by a statistical subcommittee, with John D. Gill, The Atlantic Refining Co., Philadelphia, Pa., as chairman, will conduct the survey. Appointment of the committees was made by the institute's board of directors at the October 3 meeting in Tulsa, Okla., on concurrent recommendations of the general committees of the institute's Divisions of Production and Refining.

In a letter to all refiners of this country, W. R. Boyd, Jr., executive vice president of the institute, explained the purpose and methods of conducting the survey, as follows:

"The October 3 meeting at Tulsa of the institute's board of directors approved concurrent recommendations of the general committees of the Divisions of Production and Refining to appoint a com-

(Continued on Page 138)

TO SELL MONTANA REFINERY

The Reliance refinery at Kalispell, which has been idle for several years, will be sold to satisfy the State's claim for overdue gasoline taxes amounting to $28,000. The tax in question was assessed in 1926.

The Montana State Board of Equalization and a committee representing some of the prominent producers of the State are working out a system for checking gasoline sales from Montana refineries to Canada. Such sales are not subject to the state gasoline tax and it is claimed that some gasoline sold tax-free on this pretense has been marketed again in the State.

PHILLIPS CO. BUYS STATIONS

CHICAGO, Oct. 17.—The Phillips Petroleum Co., Inc., has bought the oil jobbing business of Smith Brothers at Kankakee, Ill. The expansion made by the Phillips organization in the southern part of the State has been commented on by several men from that territory and slowly, the Phillips signs and trademarks are displacing others on stations in the northern part of the State.

BUILD FRENCH REFINERY

NEW YORK, Oct. 20.—Bethlehem Steel Corp. and the C. B. Roberts Engineering Co., which have been constructing a large refinery at Teneriffe in the Canary Islands for the Spanish Petroleum Monopoly, will build a large refinery in France for the French government, construction to start within the next year, it is reported here. L. D. Wyant, Tulsa engineer, will be in charge of construction plans for the French plant, it is reported.

FOUR STATES' JOBBERS MEET IN KANSAS CITY

Marketing interests of Missouri, Kansas, Iowa and Nebraska were represented at the Four State Jobbers convention held in the Hotel President, Kansas City, October 14, 15 and 16, and attended by about 1,000 independent wholesalers and retailers of petroleum products.

Addresses delivered included: "Where Do We Go From Here?" Frank Moore, Continental Oil Co., Ponca City, Okla.; "Stations, Sales and Service—We Must Take Up the Slack," G. French, Sinclair Refining Co., New York; "Safety in Handling Petroleum Products," H. N. Blakeslee, National Safety Council, Chicago; "Super Service Stations—Are They Practical?" Ken Cloud, editor Super Service Station, Chicago; "Character in Business," J. L. Doyle, S. F. Bowser Co., Fort Wayne, Ind.; "Bigger Profits in Better Merchandising," R. M. Ward, Skelly Oil Co., Eldorado, Kans.; "The Petroleum Code, a Guide to Fair Business Profits on a Fair Basis," Paul E. Hadlick, secretary, division of marketing, American Petroleum Institute, New York.

Entertainment features embraced a luncheon in the Hotel President roof garden Wednesday noon, a barbecue dinner and rodeo given by the Kansas City Oil Men's Club, Wednesday evening, and a tour of points interesting to oil jobbers Thursday forenoon.

Secretaries of the state associations joining in the convention formed an executive committee in charge of the daily programs. These secretaries were M. L. Long of Des Moines, for Iowa; Charles M. Sutherland of Lincoln, for Nebraska; John A. Motter of Wichita, for Kansas; and George S. Allee of Kansas City who is both president and secretary of the Missouri organization.

BUY GREAT LAKES SITE

CHICAGO, Oct. 20.—In asking for a permit to lay its pipe line through Illinois the Railroad Commission were informed that a site for the Great Lakes terminal had been secured at Melrose Park, a suburb located a few miles northwest of the city. It would be but a few miles to the bulk plant which the Barnsdall corporation and the Conoco Oil Co. have at Tessville which is in the northwestern part of the city. Both of the mentioned bulk plants are practically new and modern in planning and equipment and have a large present capacity with room for additional storage if desired.

INSTALL DUBBS UNITS

NEW YORK, Oct. 20.—The Assam Oil Co. is installing two type 504 Dubbs cracking units at its refinery at Digboi, India. Assam Oil is associated with Burmah Oil Co. The new units are of the latest type, equipped with radiant heat furnaces containing fifty 4-inch tubes. Each unit is equipped with two reaction chambers 10 feet in diameter, 30 feet high.

A. H. WHITE RESIGNS

CHICAGO, Oct. 20.—A. H. White has resigned his position of vice president in charge of sales with the Indian Refining Co., effective as of December 31. The new plans of Mr. White are not yet ready for announcement but it is understood that they are not of the same nature as his present occupation. He will be succeeded by Henry L. Rausch, district manager of the company at Indianapolis, Ind., who is already in charge under Mr. White's supervision. Mr. Rausch has been with the Indian company for upwards of 10 years and has held several district managerships.

CANADIAN REFINERY PROJECT

CHATHAM, Ontario, Oct. 18.—The establishment by the Sinclair Oil Co. of a chain of Canadian refineries is forecast for the near future as a result of the imposition by the Canadian government of a 2½-cent duty on gasoline. The Sinclair interests have in recent years built up an extensive marketing organization in Canada, which is at present dependent on imports for its supply.

It is understood that $30,000,000 has been appropriated for the proposed Canadian refineries, and that Montreal, Toronto, Sault Ste. Marie and Winnipeg, and possibly Vancouver, are being considered as refinery locations. Two or three large refineries may be built, or four or five smaller plants. Expenditure on the individual plants will range from $5,000,000 to $15,000,000 according to the policy ultimately adopted.

Sault Ste. Marie, near the head of the Great Lakes, convenient of access to the prairie provinces and having easy water communication with the east, is apparently regarded as a key location. Crude oil could be transported to this point from the foot of Lake Michigan, while the refined products could be easily distributed to both eastern and western Canada. C. A. Ham, Canadian general manager of the Sinclair company, will shortly visit Sault Ste. Marie in connection with the project. It is understood that construction work would commence early in the spring and the plant would be in readiness to operate by September.

DISSOLVE MICHIGAN CENTRAL

Dissolution papers for the Michigan Central Refining Co. and for the Northland Oil Transit Co., associated operators of a refining plant and pipe line gathering system in the Muskegon oil field, have been filed with the secretary of state at Lansing.

The refining plant operated for about nine months by the Michigan Central company was sold and moved to Mount Pleasant where it is now in operation under the name of the Roosevelt Oil Co.

The pipe line was recently taken up and moved to Mount Pleasant also where it now forms part of an independent line controlled by the Roosevelt Oil Co.

Charles L. Maguire, head of the Northland Oil Co., of Chicago, and Thomas F. Caldwell, also of Chicago, were vice president and secretary-treasurer, respectively, of both of the Muskegon companies now officially dissolved. Mr. Caldwell, who was in charge of operations of both the pipe line and the refinery here, is now in charge of similar operations for the Roosevelt Oil Co. at Mount Pleasant.

KETTLEMAN HILLS REFINERY

LOS ANGELES, Calif., Oct. 18.—Kettleman Hills Gasoline Co. of Taft, has contracted for the landowners' share of the oil from the Associated Oil's No. 1 Whepley well, in Section 35-21-17, and all subsequent wells on the lease, and is constructing a refinery to take care of this oil along with government oil which it has been receiving for the past two years.

The engineering work is under direction of A. B. Scott, formerly of the Bellridge Oil, and James A. Robson, formerly in charge of the Santa Fe pipe lines at Fellows and associated with George Phillips in several construction jobs, wil have charge of construction. George Barrickman is chief chemist. William Gibson, formerly with the Pan American Petroleum in the Elk Hills, is to be the auditor. The contract calls for completion of the refinery November 15.

EVIDENCE INSUFFICIENT IN MICHIGAN PRICE WAR

MUSKEGON, Mich., Oct. 20.—Retail and wholesale independent oil dealers of Michigan have taken legal action against several of the major oil companies in the latest developments in the gasoline price war in Michigan. A demand that the White Star Refining Co., Standard Oil Co. of Indiana, Shell Petroleum Corp., Sun Oil Co. and the Sinclair Refining Co. be excluded from Michigan because of alleged unfair practices in the price was was filed with the secretary of state and attorney general by independent oil dealers.

The independents charged that these companies are attempting to reduce prices to a point where competition will be eliminated and asked that the State intervene in a pending case in the federal district court at Detroit and also issue a quo warranto decree ousting the big companies from the State.

Emerson R. Boyles, deputy attorney general, declared that a preliminary investigation has failed to reveal any discrepancies serious enough to warrant state intervention.

In another action started at Detroit, Circuit Judge Alfred J. Murphy signed a temporary injunction restraining the Standard of Indiana and the Sinclair Refining Co. from cutting dealers' profits from 4 to 3 cents a gallon.

A hearing on the temporary injunction will be held Saturday, October 25. The petition for the injunction was initiated by the Retail Gasoline Dealers' Association and seven of its members. They asked that the Standard of Indiana be restrained from cutting their profits while at the same time it holds the agents to the terms of the contracts on leasing stations which were completed when the original margin agreements were made.

STRIKE NOT SERIOUS

NEW YORK, Oct. 20.—International Fuel Handlers Union has called a strike of filling station employes in New York area in an effort to force recognition of the union, higher wage levels, and shorter working hours. While union officials claim that between 800 and 1,500 filling station employes have walked out, officials of the principal marketing companies operating in New York City state that the strike has not affected operation of their stations and that very few men have walked out. Union officials are now attempting to tie-up tank wagon deliveries of gasoline but it is not expected that the strike will gain much headway.

TO DISTRIBUTE TIRES

NEW YORK, Oct. 20.—Imperial Oil Co., Ltd., Canadian subsidiary of Standard Oil Co. of New Jersey, is introducing the sale of tires and tubes at its service stations, according to announcement by C. O. Stillman, president.

The Canadian company will engage in the tire business both as wholesalers and retailers, and will handle the same brand as the parent company.

VACUUM BUYS QUEEN CITY CO.

NEW YORK, Oct. 20.—Vacuum Oil Co. has added further to its distributing system through purchase of a controlling interest in the Queen City Petroleum Products Co., Cincinnati jobbers and operators of an extensive chain of filling stations in southwestern Ohio.

The Queen City company was formed in 1923 and reported for the past year sales in excess of $1,300,000. The company operates a number of bulk plants in addition to its retail stations.

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REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Oct. 21		Oct. 14		Oct. 7	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.05¼	.05½	.05½	.06¼	.05¾	.06¼
56-58 450 endpoint	.05	.05½	.05¼	.06	.05¾	.06
*58-60 437 endpoint (U. S. Motor)	.0608		.0619		.0629	
*60-62 437 endpoint	†.05½	.06	†.05¾	.06	†.06¼	.06½
*60-62 400 endpoint	.0663		.0663		.0681	
*64-66 375 endpoint	†.06¼		†.06¼	.06½	†.06¾	.07¼
68-70 360 endpoint	.06½	.06¾	.06¾	.07¼	.07	.07½
64-66 437 endpoint (blend)	.05¼	.05¾	.05½	.06	.05¾	.06¼

*Weighted average prices October 20, 13 and 6 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

NORTH TEXAS—						
50-52 450 endpoint	.05¼	.05½	.05¼	.05½	.05½	.05¾
58-60 450 endpoint	.05¼	.05½	.05¼	.05½	.05½	.05¾
58-60 437 endpoint (U. S. Motor)	.05¼	.05½	.05¼	.05½	.05½	.06
60-62 400 endpoint	.05½	.05¾	.05½	.05¾	.05¾	.06
64-66 390 endpoint	.05⅝	.05¾	.05⅝	.05¾	.06	.06¼
64-66 375 endpoint	.05¾	.06	.05¾	.06	.06⅛	.06¼
68-70 360 endpoint	.06¼	.06½	.06¼	.06½	.06¾	.07
64-66 437 endpoint (blend)	.05¼	.05½	.05¼	.05½	.05¼	.05¾
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.06½	.07	.06½	.07	.06¾	.07
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.06½	.07	.06½	.07	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.06¾		.06¾		.06¾	
54-56 Naphtha	.06¾	.07	.06¾	.07	.06¾	.07
58-60 Gasoline	.06¾	.07	.06½	.06¾	.06½	.06¾
60 Gasoline	.06¾	.07	.06¾	.07	.06¾	.07
62 Gasoline	.07	.07¼	.07	.07¼	.07¼	.07½
64 Gasoline	.07½	.08	.07½	.08	.07½	.08
68-70 350 endpoint gasoline	.08½	.08¾	.08½	.08¾	.08½	.08¾
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.08½	.11	.08½	.10½	.08½	.10
†60-62 400 endpoint domestic gasoline	.10	.12	.10	.11½	.09½	.11
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.05¼		.05½	.05¾	.05⅝	.06
56-58 450 endpoint	.05	.05¼	.05½	.05¾	.05⅝	.06
58-60 437 endpoint (U. S. Motor)	.05	.05½	.05¼	.05½	.05⅝	.06¼
60-62 400 endpoint	.05¼	.05½	.05½	.06	.06	.06½
64-66 375 endpoint	.06¾	.07	.06	.06½	.06½	.06¾
68-70 360 endpoint	.07	.07¼	.06¼	.06½	.06⅞	.07
64-66 437 endpoint (blend)	.05¼	.05¾	.05¾	.06¼	.05¾	.06¼
‡**GULF COAST (Export)—**						
58-60 U. S. Motor	.07		.07		.07	
60-62 400 endpoint	.075		.075		.075	
61-63 390 endpoint	.0775		.0775		.0775	
64-66 375 endpoint	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption. ‡Prices posted by Export Petroleum Association, Inc.

NATURAL GASOLINE

	Oct. 21		Oct. 14		Oct. 7	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¼		.05¾		.06	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05¾		.06	
Grade C, 80-92, 375 e.p., rec. 78%	.05¼		.05¾		.06	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¼		.05¾		.06	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05¾		.06	
Grade C, 80-92, 375 e.p., rec. 78%	.05¼		.05¾		.06	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05¼	.05½	.05¾	.06	.06	.06¼
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼	.05½	.05¾		.06	
Grade C, 80-92, 375 e.p., rec. 78%	.05¼		.05¾		.06	
CALIFORNIA—						
75-78, 375-390 endpoint	.07	.09	.07	.08½	.07	.08½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¼		.05¾		.06	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05¾		.06	

BURNING OIL

	Oct. 21		Oct. 14		Oct. 7	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
42-44 water white kerosene	.03¼	.03⅜	.03⅜	.04	.03½	.04
NORTH TEXAS—						
41-43 water white kerosene	.02	.03¼	.03	.03¼	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
***NORTH LOUISIANA—**						
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04	.04¼
***ARKANSAS—**						
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.04¾		.04¾		.04¾	
45 Kerosene water white	.05	.05¼	.05	.05¼	.05	.05¼
46 Kerosene water white	.05	.05¼	.05	.05¼	.05	.05¼
300 Mineral Seal	.05½		.05½		.05½	
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.06	.04¾	.06	.04¾	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03⅜	.03¼	.03½	.03½	.03½
42-44 water white kerosene	.03¼	.03½	.03½	.03¾	.03½	.03¾
†**GULF COAST (Export)—**						
41-43 prime white	.06		.06		.06	
41-43 water white	.05		.05		.05	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Prices posted by Export Petroleum Association, Inc.

FUEL OIL

	Oct. 21		Oct. 14		Oct. 7	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
18-22 Fuel Oil, per bbl.	.47½	.52½	.47½	.52½	.47½	.52½
20-22 Fuel Oil, per bbl.	.50	.57½	.50	.57½	.50	.57½
22-26 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.70	.80	.70	.80	.70	.75
28-30 Fuel Oil, per bbl.	.85	.90	.85	.90	.80	.85
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
36-38 Distillate	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
38-40 Straw Distillate	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.35	.50	.35	.50	.40	.50
24-26 Fuel Oil, per bbl.	.55	.65	.55	.65	.60	.65
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
30-32 Gas Oil	.02⅞		.02⅞		.02⅞	
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
16-22 Refinery Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾		.03¾		.03¾	
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.75	.80
Bunker C Fuel (small lots)	1.00		1.00		1.00	
PENNSYLVANIA—						
30-34 Fuel Oil	.04		.04		.04	
36-40 Fuel Oil	.04	.04¼	.04	.04¼	.04	.04¼
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.65	.95	.65	.95	.65	.95
15-20 Fuel Oil (cargo lots), per bbl.	.60	.85	.55	.85	.55	.85
27 plus Diesel, per bbl.	.85	1.00	.85	1.00	.85	1.00
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.62½	.67½	.60	.65	.52½	.57½
18-22 Fuel Oil, per bbl.	.55	.60	.52½	.60	.47½	.52½
28-30 Fuel Oil, per bbl. (zero)	.90	.95	.87½	.92½	.87½	.92½
32-36 Gas Oil (zero)	.02½	.02⅞	.02½	.02⅞	.02⅜	.02¾
32-36 Gas Oil (industrial)	.02¼	.02⅞	.02¼	.02⅜	.02¼	.02⅜
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	Oct. 21		Oct. 14		Oct. 7	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06¼	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.07		.07¼	.07½	.07¼	.07½
150 vis., 4 color, 20-25 cold test	.06½		.07		.07	
180 vis., 3 color, 23-28 cold test	.08½		.08½	.09	.08½	.09
180 vis., 4 color, 23-28 cold test	.08		.08¼	.08½	.08¼	.08½
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.08		.08	
200 vis., 3 color, 23-28 cold test	.09¾	.10	.10	.10¼	.10	.10¼
200 vis., 4 color, 23-28 cold test	.09½		.09½	.10	.09½	.10
200 vis., 5 color, 23-28 cold test	.09		.09¼	.09½	.09¼	.09½
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12½	.13	.12½	.13
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11½	.12	.11½	.12
280 vis., 3 color, 25-30 cold test	.15½		.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.14½		.14½	.15	.14½	.15
280 vis., 5 color, 25-30 cold test	.13½		.13½	.14	.13½	.14
Cylinder Stocks:						
600, steam refined, light green	.08	.10	.08	.12	.08	.12
600, steam refined, dark green	.05	.06	.05	.08	.05	.08
190-200 vis., D color, Bright Stocks	.28		.30		.30	
150-160 vis., D color, Bright Stocks	.22	.23	.23	.25	.23	.25
*150-160 vis., D color, Bright Stocks	.21	.22	.21	.23	.21	.23
150-160 vis., E color, Bright Stocks	.20	.22	.20	.23	.20	.23
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

*High cold test. All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06½	.05½	.06½	.05½	.06½
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05¾		.05¾		.05¾	
150, 3 color	.11¼	.12¾	.11½	.13	.11½	.13
180, 3 color	.16	.17	.16	.17	.16	.17
200, 3 color	.17½	.18	.17½	.18	.17½	.18
220, 3 color	.21	.22	.21	.22	.21	.22
600, steam refined	.11	.12	.11	.12	.11	.12
635, steam refined	.17	.18	.16	.17	.16	.17
650, steam refined	.15½	.16½	.15½	.16½	.16½	.17
600, Pennsylvania Flash	.17	.18	.17	.18	.17	.18
630, Pennsylvania Flash	.24½	.25½	.24½	.25½	.24½	.25½
600, E filtered	.15	.17	.15	.17	.15	.17
600, D filtered	.19	.21	.19	.21	.19	.21
Pennsylvania Bright Stocks	.22	.23	.22	.23	.23	.25
*122-124 White Crude Scale Wax	.02¼		.02⅜		.02⅜	
124-126 White Crude Scale Wax	.02¼		.02⅜		.02⅜	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
200 vis., 3 color, pale oil	.08½	.09	.08½	.09	.09½	
300 vis., 3 color, pale oil	.09¾	.10	.09¾	.10	.10¾	
500 vis., 3½ color, pale oil	.11	.11¼	.11	.11¼	.12	.12¾
750 vis., 3½ color, pale oil	.12½	.12¾	.12½	.12¾	.13½	
1,200 vis., 3½ color, pale oil	.15	.15¼	.15	.15¼	.16	
2,000 vis., 6 plus color, red oil	.16	.16¼	.16	.16¼	.17	
200 vis., 5-6 color, red oil	.07¾	.08	.07¾	.08	.08¾	.09
300 vis., 5-6 color, red oil	.09	.09¼	.09	.09¼	.10	.10¼

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

500 vis., 5-6 color, red oil	.10¼	.10½	.10¼	.10½	.11¼	
750 vis., 5-6 color, red oil	.11¾	.12	.11¾	.12	.12¾	.13
1,200 vis., 4 color, pale oil	.14	.14½	.14	.14½	.15	
2,000 vis., 4 color, pale oil	.16	.16½	.16	.16½	.17	
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 5-6 color	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
400 vis., 5-6 color	.12	.12½	.12	.12½	.12	.12½
500 vis., 4½-5 color	.13	.13½	.13	.13½	.13	.13½
500 vis., 5-6½ color	.13	.13½	.13	.13½	.13	.13½
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13	.14½

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Oct. 21		Oct. 14		Oct. 7	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.07¾		.07¾		.07¾	
Kerosene, water white, 41-43	.06¾		.06¾		.06¾	
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 28 gravity plus	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03⅛	
125-127 a.m.p., per lb.	.03¼		.03¼		.03⅜	
130-132 a.m.p., per lb.	.03⅜		.03⅜		.03¼	
133-135 a.m.p., per lb.	.04⅜		.04⅜		.04⅜	
135-137 a.m.p., per lb.	.046		.046		.046	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06⅝	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents per barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Oct. 21	Oct. 14	Oct. 7
600, steam refined cylinder stocks, in bbls.	.17	.16½	.16½
635, steam refined	.19	.18½	.18½
650, steam refined	.23	.22½	.22½
600, Pennsylvania Flash	.26	.26	.28
630, Pennsylvania Flash	.29	.29	.31
600, Warren E	.24	.24	.24
600, Oil City E	.23	.23	.23
Light 140-150 Bright Stocks	.29	.29	.29
Dark 140-150 Bright Stocks	.27	.27	.27

LOS ANGELES EXPORT PRICES

	Oct. 21		Oct. 14		Oct. 7	
Kerosene, water white	.04¾	.06¼	.04½	.06	.04½	.06
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.07½	.06½	.07½	.06½	.07½
*60-62, 400 endpoint gasoline	.08¼	.09½	.08¼	.09½	.08¼	.09½

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.43 on April 10.
Corsicana heavy (April 10, 1930).....$ .80
Other fields.....See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

In Noel-McConnell district, Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

WEST TEXAS

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Ector.....
.....See gravity table, Column 3
Howard and Glasscock.....
.....See gravity table, Column 9
Chalk† (April 10, 1930).....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (April 11, 1930).....$ .90
Smackover, 24 gravity and above (April 11, 1930).....1.05
Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930).....95
Bellevue (April 11, 1930).....1.15
Urania (April 11, 1930).....95
East El Dorado (April 11, 1930).....90
Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

Grade A (April 10, 1930)*.....$1.15
Grade B, 25° and upward..See gravity table
Jennings, La., (April 10, 1930)†.....1.10
Refugio (light).....Same as Grade B
Refugio (heavy) (April 10, 1930)‖.....35
Sorrento (April 10, 1930)‡.....1.10
Markham (April 10, 1930)§.....35
High Island (April 10, 1930)‖.....95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §Texas Pipe Line Co. ‖Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective April 11, 1930)

Iles (Feb. 15, 1930).....$ .87
33 gravity and above.....87
Under 33 gravity.....65
Dutton Creek (Feb. 15, 1930).....1.25
Rock Creek, Wyo.....1.35
Salt Creek.....See gravity table
Big Muddy.....1.33
Grass Creek, heavy (July 27, 1928).....90
Grass Creek, light.....1.55
Mule Creek (May 21, 1929).....1.30
Elk Basin.....1.55
Lance Creek.....1.63
Poison Spider (March 14, 1927).....1.00
Notches (March 14, 1927).....65
Rex Lake (February 22).....1.10

(Continued on Page 132)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Oklahoma-Kansas	2 North Central Texas No. La., Arkansas	3 Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell (West Texas) Lea, N. Mex.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Howard-Glasscock (West Texas)	10 Grade B Gulf Coast and Refugio Texas
Below 25	.75	.72	.65	....	....	....	....	....	.65	1.00
25 to 25.9	.80	.77	.68	....	....	....	....	....	.68	1.03
26 to 26.9	.85	.82	.71	....	....	....	....	....	.71	1.06
27 to 27.9	.90	.87	.74	....	....	....	....	.76	.74	1.09
28 to 28.9	.95	.92	.77	....	.60	.55	....	.81	.76	1.12
29 to 29.9	1.00	.97	.80	.75½	.64	.59	1.00	.86	.78	1.15
30 to 30.9	1.05	1.02	.83	.80½	.68	.63	1.05	.91	.80	1.18
31 to 31.9	1.10	1.07	.86	.85½	.72	.67	1.10	.96	.82	1.21
32 to 32.9	1.15	1.12	.89	.90½	.76	.71	1.15	1.01	.84	1.24
33 to 33.9	1.18½	1.17	.92	.95½	.80	.75	1.18½	....	.86	1.27
34 to 34.9	1.22	1.22	.95	1.00⅛	.84	.79	1.22	....	.88	1.30
35 to 35.9	1.25½	1.25½	.98	1.04	.87	.82	1.25½	....	.90	1.33
36 to 36.9	1.29	1.29	1.01	1.07½	.90	.85	1.29	....	.92	1.36
37 to 37.9	1.32½	1.32½	....	1.11	.93	.88	1.32½	....	....	1.39
38 to 38.9	1.36	1.36	....	1.14½	.96	.91	....	....	....	1.42
39 to 39.9	1.39½	1.39½	....	1.18	.99	.94	....	....	....	1.44
40 to 40.9	1.43	1.43	....	1.21½	1.02	.97	....	....	....	1.46
41 to 41.9	1.46½	1.46½	....	1.25	1.05	1.00	....	....	....	1.48
42 to 42.9	1.50	1.50	....	1.28½	1.08	1.03	....	....	....	1.50
43 to 43.9	1.53½	1.53½	....	1.32	1.11	1.06	....	....	....	1.52
44 and above	1.57	1.57	....	1.35½	1.14	1.09	....	....	....	1.54

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25° and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24° and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 and up and including 44° and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—On October 16 Humble Oil & Refining Co. posted separate scale of prices for Wichita, Wilbarger, Archer and North Young Counties, as follows: Below 29°, 65 cents; 29 to 29.9°, 69 cents, with a 4-cent differential upwards to 32-32.9° which was posted at 81 cents, and a 5-cent differential upwards thereafter for each degree up to 44 and above at $1.19. All companies adopted this schedule for the counties named, but Magnolia Petroleum Co., on October 17 followed by Stanolind Crude Oil Purchasing Co., extended the same schedule to all pools in North, Central and East Texas in which they purchase oil on a gravity basis. Prairie, Gulf and Texas companies continue to pay prices posted in Column 2 in Central and East Central Texas. North Central Texas includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran and Corsicana light. Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley (above 36 gravity), DeSoto, Haynesville, Homer, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co. April 10, 1930.

Column 4—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., October 16. Other companies October 17.

Column 7—Midwest Refining Co., April 11. All crude over 37 gravity, $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity, 65 cents, with 3-cent differential upward to and including 36 and above which was posted at $1.01.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co. (effective September 15, 1930), Union Oil Co. (effective September 15, 1930)

Gravity—	1 Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda, Brea Canyon	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria Coalinga	7 Wheeler Ridge	8 Orcutt, Ventura, Rincon	9 Ventura Avenue	10 Elwood Terrace	11 Athens, Rosecrans, Dominguez
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.92	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	1.04	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.08	1.05	....	1.13
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.11	1.10	....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1.15	1.15	....	1.22
27 to 27.9	1.26	1.21	1.18	1.19	1.18	1.11	1.10	....	1.19	....	1.27
28 to 28.9	1.30	1.25	1.23	1.23	1.23	1.15	....	....	1.23	....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1.28	1.19	....	....	1.27	....	1.37
30 to 30.9	1.38	1.33	1.35	1.29	1.33	1.23	....	....	1.31	....	1.42
31 to 31.9	1.43	....	1.40	....	1.38	1.27	....	....	1.36	....	1.47
32 to 32.9	1.48	....	1.47	....	1.43	1.31	....	....	1.41	....	1.52
33 to 33.9	....	....	1.53	....	1.48	1.35	....	....	1.47	....	1.57
34 to 34.9	....	....	1.59	....	1.53	1.39	....	....	1.53	1.32	1.62
35 to 35.9	....	....	1.65	....	1.58	1.43	....	....	1.59	1.39	1.66
36 to 36.9	....	....	....	....	1.63	....	....	....	....	1.46	1.72
37 to 37.9	....	....	....	....	1.68	....	....	....	....	1.53	1.78
38 to 38.9	....	....	....	....	1.73	....	....	....	....	1.60	1.84
39 to 39.9	....	....	....	....	1.78	....	....	....	....	1.66	1.90
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	1.96
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.02
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.08

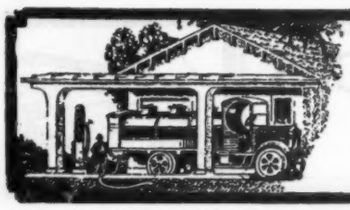
Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 12.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents. Fruitvale, posted by General Petroleum Co., 11-13.9, 50 cents; 14 gravity and above, 55 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset,

(Continued on Page 140)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Oct. 21

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	16.0	17.0	3 0	11.0
Decatur, Ill.	16.4	17.0	3.0	11.0
E. St. Louis	15.7	14.7	3.0	10.2
Joliet	16 4	17 4	3.0	11.0
Peoria	16.4	14.0	3.0	11.0
Quincy	16.2	17.2	3.0	10.8
Davenport, Ia.	16.5	16.5	3.0	11.3
Des Moines	15.5	16.5	3.0	11.3
Keokuk	16.5	17.5	3.0	11.3
Sioux City	16.1	15.9	3.0	10.9
Duluth, Minn.	17.5	18.5	3.0	11.8
Mankato	14.0	14.0	3.0	11.7
Minneapolis	17.0	17.0	3.0	11 9
La Crosse, Wis.	16.2	17.2	2.0	12.0
Milwaukee	15.1	15.0	2.0	10.9
Madison	15.2	16.3	2.0	11.1
Detroit, Mich.	16.8	14.3	3 0	12.7
Grand Rapids	15.7	16.7	3.0	12.6
Saginaw	14.3	16.9	3.0	12.8
Evansville, Ind.	17.1	18.1	4.0	11.9
Indianapolis	16.9	17.9	4.0	12.1
South Bend	17.4	18.4	4.0	12.2
Fargo, N. D.	18.9	19.9	3.0	13.9
Huron, S. D.	17.5	17.5	4.0	12.7
Sioux Falls	17.8	18.1	4.0	12.4
K. C., Mo.	14.9	16.9	3.0	9.6
Springfield*	15.9	16.9	3.0	10.5
St. Louis*	12.9	13.9	2.5	10.3
St. Joseph	15.5	11.9	2.0	10.1
Wichita, Kans.	14.3	13.8	3.0	9.8
Bartlesville, Ok.	15.5	18.5	4.0	9.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline: 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16.0	19.0	4.0	13.5
Pueblo	17.0	20.0	4.0	13.5
Grand Junction	20.5	23.5	4.0	17.0
Casper, Wyo.	17.0	20.0	4.0	12.0
Cheyenne	18.0	21.0	4.0	13.5
Butte, Mont.	19.0	22.0	5.0	18.0
Billings	20.0	23.0	5.0	16.5
Great Falls	20.0	23.0	5.0	18.0
Helena	23.5	26.5	5.0	18.0
Salt Lake, Utah	20.0	23.0	3.5	17.0
Albu'que, N. M.	16.0	20.0	5.0	15.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	17.0	4.0	12.0
Fort Worth	14.0	17.0	4.0	11.0
Houston	15.0	19.0	4.0	11.0
San Antonio	13.0	17.0	4.0	11.0
El Paso	16.0	20.0	4.0	13.0
Texarkana	17.0	17.0	4.0	12.0
Muskogee*	15.0	18.0	4.0	9.0
Okla. City.*	14.0	17.0	4.0	10.0
Tulsa	14.0	18.0	4.0	10.0
Ft. Smith, Ark.	14.5	15.5	5.0	12.0
Little Rock	15.0	16.0	5.0	12.0

*Gasoline tank wagon price to dealers 1 cent under posted tank wagon.

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	17.25	18.25	4.0	11.25
McCook	18.75	20.75	4.0	12.75
Norfolk	17.25	17.25	4.0	11.75
N. Platte	18.75	20.75	4.0	12.50
Scott's Bluff	17.00	17.00	4.0	12.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	18.0	19.0	4.0	†15.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	13.5	14.5	5 0	12.0
Baton Rouge	13.5	14.5	4.0	13.0
Alexandria†	14.5	15.5	5.0	13.0
Lafayette*	14.5	15.5	5.0	13.0
Lake Charles*	14.5	15.5	5.0	13.0
Shreveport	13.5	14.5	4.0	13.0
Knoxv'le, Tenn.	16.0	17.0	5.0	15.0
Memphis	14.0	15.0	5.0	12.5
Chattanooga	18.0	19.0	5.0	13.0
Nashville	15.0	16.0	5.0	15.0
Bristol	17.0	18.0	5.0	14.0
Lt. Rock, Ark.	14.5	15.5	5.0	12.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

One cent discount allowed off station price on all cash purchases. All other station discounts withdrawn October 2, 1930.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	14.5	16.5	2.0	11.5
Newark	12.5	15.5	2.0	10.5
Annapolis, Md.	16.0	18.0	4.0	11.0
Baltimore	15.2	17.2	4.0	9.5
Cumberland	17.0	19.0	4.0	12.0
Wash'gton, D.C.	13.7	15.7	2.0	10.7
Danville, Va.	17.8	19.8	5.0	11.8
Norfolk	16.3	18.3	5.0	10 0
Petersburg	17.3	19.3	5.0	11.3
Roanoke	18.0	20.0	5.0	12.0
Richmond	16.7	18.7	5.0	10.7
Charles'n, W.Va.	16.5	18.5	4.0	11.5
Keyser	17.1	19.1	4.0	12.0
Parkersburg	15.2	17.2	4.0	10.2
Wheeling	16.4	18.4	4.0	11.4
Charlotte, N. C.	18.3	20.3	5.0	12.3
Hickory	18.6	20.6	5.0	12.6
Mt. Airy	18.5	20.5	5.0	12.5
Salisbury	18.5	20.5	5.0	12.5
Charleston, S.C.	17.3	19.3	6.0	10.3
Columbia	19.2	21.3	6.0	12.3

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	21.0	23.0	6.0	14.5
Augusta	22.0	24.0	6.0	15.5
Macon	22.0	24.0	6.0	13.0
Savannah	20.0	22.0	6.0	14.0
Birm'ham, Ala.	18.0	20.0	5.0	14.5
Mobile	19.0	21.0	4.0	11.5
Montgomery	20.0	22.0	4.0	15.0
Clarks'le, Miss.	19.0	21.0	5.0	12.5
Jackson	17.0	17.0	5.0	13.0
Natchez	19.0	21.0	5.0	13.0
Gulfport	20.5	22.5	5.0	13.0
Vicksburg	19.0	21.0	5.0	13.0
Jack'ville, Fla.	19.0	19.0	6.0	14.0
Miami	21.0	23.0	6.0	14.0
Pensacola	20.0	21.0	6.0	13.5
Tampa	20.0	20.0	5.0	13.0
Lexington, Ky.	19.0	20.0	5.0	14.5
Covington	19.0	21.0	5.0	14.5
Louisville	18.0	20.0	5.0	13.5
Ashland	18.0	20.0	5.0	15.0
Catlettsburg	18.0	20.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	15.6	17.6	2.0	15.6
New York*	14.3	16.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	14.5	16.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N.H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	15.0	*20.0	...	12.0
Philadelphia	15.0	*20.0	...	12.0
Scranton	15.0	*20.0	...	12.0
Allentown	15.0	*20.0	...	12.0
Altoona	15.0	*20.0	...	12.0
Erie	15.0	*18.0	...	12.0
Dover, Del	18.0	20.0	3.0	12.0
Wilmington	18.0	20.0	3.0	12.0
Springf'd, Mass.	17.5	19.5	2.0	10.0
Worcester	17.3	19.3	2.0	10.0
Boston	16.5	18.5	2.0	10.0
Providence, R.I.	13.7	14.7	2.0	10.0
Hartford, Conn.	17.5	19.5	2.0	12.5
New Haven	17.6	19.6	2.0	12.6

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wholesale price	Retail price	Incl'ds tax of	tank wagon
Fresno	23.0	21.0	3.0	17.0
San Francisco	23.0	21.0	3.0	15.5
Los Angeles	22.5	20.5	3.0	15.5
Reno, Nev.	28.0	26.0	4.0	19.0
Portland, Ore.	24.5	22.5	4.0	16.5
Seattle, Wash.	23.5	21.5	3.0	16.5
Tacoma	23.5	21.5	3.0	16.5
Spokane	27.5	25.0	3.0	20.5
Phoenix, Ariz.	17.0	20.0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10.0
V. M. & P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

TANK WAGON CHANGES

Standard Oil Co. of Louisiana on October 11 made a reduction of 1 cent a gallon in tank wagon and service station prices on gasoline in Alexandria, Baton Rouge, Lafayette and Lake Charles, La., and in Knoxville, Nashville and Bristol, Tenn. On October 15 it reduced the price 1 cent in Memphis, Tenn. On October 16 it reduced the price 1 cent in Alexandria, Lafayette, Lake Charles and Shreveport, La., and Bristol, Tenn., and one-half cent in Little Rock, Ark.

Standard Oil Co. (Kentucky) reduced the service station price of gasoline from 19 cents to 17 cents October 11 in Jackson, Miss.

Standard Oil Co. of New Jersey reduced the tank wagon price on kerosene in Baltimore on October 11 from 10.2 cents to 9.5 cents.

Standard Oil Co. (Indiana) on October 18 made reductions of 1 cent in the service station price of gasoline in Davenport and Des Moines, Iowa; Wichita, Kans., and Peoria, Ill. In East St. Louis, Ill., it reduced the tank wagon price from 17.4 cents to 15.7 cents and the service station price from 18.4 cents to 14.7 cents. In St. Louis, Mo., it reduced both the tank wagon and service station prices 2 cents from 14.9 cents and 15.9 cents. On September 29 it made reductions of 1 to 4 cents in tank wagon and service station prices in Mankato, Minn.; Milwaukee, Wis.; Grand Rapids and Saginaw, Mich.; Evansville and Indianapolis, Ind.; Fargo, N. Dak.; Huron, S. Dak.; Kansas City, St. Louis, Springfield and St. Joseph, Mo., and Wichita, Kans. In Minneapolis it increased the tank wagon price from 16 cents to 17 cents and in Sioux Falls from 17.1 cents to 17.8 cents. On October 21 it reduced the service station price in Milwaukee 1 cent, making it 15 cents, and the service station price in Minneapolis 1 cent, making it 17 cents.

Magnolia Petroleum Co. reduced both tank wagon and service station price in Little Rock, Ark., one-half cent on October 3, making the prices 15 and 16 cents.

CRUDE OIL PRICES

(Continued from Page 131)

Osage (Oct. 16, 1930)	1.25
Lost Soldier (contract, May 22)	1.00
Hamilton Dome (March 14, 1927)	.85
Greybull (April 11, 1930)	1.55
Four Bear (May 31, 1929)	.85
Cat Creek	1.55
Ponderа (Montana) (April 10, 1930)	1.55
Sunburst (Montana) (Feb. 15, 1930)	1.65
Hogback (Feb. 15, 1930)	1.40
Artesia (New Mexico)	1.05
Lea County	See gravity table

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 10, 1930)*	$1.15
Luling (April 10, 1930)	.85
Mirando (April 10, 1930)†	.85
Pettus (Aug. 21, 1930)§	1.15
Salt Flat (April 10, 1930)§	1.15
Thrall‡	
Lytton Springs (Lockhart)	See gravity table
Somerset (April 10, 1930):	
Below 33 gravity	$1.15
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.19
35 to 35.9 gravity	1.21
36 to 36.9 gravity	1.23
37 to 37.9 gravity	1.25
38 gravity and above	1.27

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective August 22, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$2.20
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	2.25
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.15
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.90
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Aug. 1, 1930)	1.50
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (August 1, 1930)	1.14
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (August 1, 1930)	1.30
Wayne District Oil in Cumberland Pipe Lines (April 11, 1930)	1.34

Tide Water Pipe Co.

Bradford district (Aug. 22)	$2.50
Allegany district (Aug. 22)	2.50

Pure Oil Co.

Cabin Creek, W. Va. (Aug. 22)	$2.40
Kelly Creek, W. Va. (Aug. 22)	2.25
Bradford Hollow, W. Va. (Aug. 22)	2.25

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1930)

Lima (June 26, 1930)	$1.50
Wooster (June 26, 1930)	1.70
Illinois	1.65
Indiana (June 26, 1930)	1.32
Princeton	1.65
Plymouth	1.23
Western Kentucky	1.55
Midland, Mich.* (Aug. 21)	1.30
Dundee, Mich. (April 16)§	
....Same as Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich. (April 16)§	
....Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil City, Ky. (July 25, 1930)§	1.35
Oil Springs (Canada) (June 28, 1930)¶	2.02
Petrolia (Canada) (June 23, 1930)¶	1.95

*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. §Posted by Standard of Indiana for boat shipment. Local refiners posted Mid-Continent prices on April 11.

MEXICAN CRUDE

Panuco*	$0.55

*F.o.b. ship, based on August transactions.

MELLOWED A HUNDRED MILLION YEARS

While fearful monsters sported on the shores of PENNSYLVANIA

You didn't get by this picture did you? And neither will the fifty million people who will see it—and others equally startling—in newspapers, magazines and rotogravure sections throughout America.

Once caught, the way you were, these fifty million will be interested—convinced—by the paragraphs that tell how Sinclair expert refiners make Mobiline 100% from Bradford-Allegany crude—the highest priced of all Pennsylvania grade crudes—the crude that was formed during the Devonian Age a hundred million years ago!

Try a crankcaseful of Mobiline in your own car. Notice how it lasts—how it stands up at draining time—how it holds its rich, green color long after most oils would have turned black in the crankcase. All points of superiority that your customers can *see* and *feel!*

Mobiline is a *year-round* Pennsylvania oil. Use and recommend the same grade for winter and summer, according to the Sinclair Law of Lubrication.

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SINCLAIR MOBILINE

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Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

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35¢ *per quart*

●1930, S. R. C.

Changes In Sinclair Balance Sheet

Cash Now at $43,000,000. H. F. Sinclair and E. W. Sinclair Comment on Situation of Industry

Certain changes have taken place in the balance sheet of the Sinclair Consolidated Oil Corp. recently, placing the company in a strong cash position with approximately $43,000,000 on deposit in banks and elsewhere and no loans outstanding, according to the New York Journal of Commerce.

Commenting on conditions in the oil industry and speaking of his own company, Chairman H. F. Sinclair of the Sinclair corporation said:

"While I have no definite figures, I have no reason to believe that the company's earnings in the final half of the current year will be better than in the first six months. However, anything can happen in the oil industry."

For the six months ended June 30 this year the company reported net profit after all charges of $3,251,709, equivalent after dividend requirements on the 8 per cent preferred to 49 cents a share on 5,420,080 shares of no-par common. This compared with a net profit of $6,196,195, or $1.02 a share on 5,460,008 shares in the first six months of 1929. For the year ended December 31, 1929, the company reported net income after all charges of $16,599,037, equivalent after preferred dividend requirements to $2.81 a share on 5,640,008 shares of no-par common.

Interviewed at Boston, Mass., E. W. Sinclair, president of Sinclair Consolidated Oil Corp., declared the petroleum industry will be distinguished in 1930 as the only one this year to show a good increase in revenues over 1929 and, at the same time, a substantial drop in profits. This he attributed to the peculiar conditions existing in the industry.

Standard Oil of Ohio

Stockholders of Standard Oil Co. of Ohio have approved an issue of $12,000,000 5 per cent cumulative preferred stock recently issued by the company. The proceeds will be used to retire the present 7 per cent preferred issue.

Continental Oil

The entire $7,500,000 principal amount of series C 5 per cent notes of Marland Oil Co. now Continental Oil Co., dated June 15, 1927, and due June 15, 1931, have been called for redemption December 15. The notes will be paid off at $1,002.40 for each $1,000 principal amount of notes on presentation and surrender, with unmatured coupons attached, at the office of J. P. Morgan & Co.

Pure Oil

Pure Oil Co. directors' meeting Tuesday omitted the quarterly dividend of 37½ cents per share due on the common stock at this time. The regular quarterly dividends of the preferred issued were voted. Explaining the passing of the common dividend, a statement issued by the company says: "Although the Van Field in Van Zandt County, Texas, of which the company owns 80 per cent, was developed and put into production this year the company was not able to utilize more than a small percentage of its possible production on account of proration both voluntary and compulsory. It was during this time obliged to carry on development of the field which now rates as one of the three or four largest in the United States. Operation of the pipe line facilities which it has built and in which it has acquired an interest this year will not be fully productive until next spring. In view of the general state of the industry and the above consideration it was felt that it was the prudent course to conserve its resources until it was in position to take advantage of the added production and pipe line facilities and until conditions in the industry improved."

Sun's Stock Dividend

Directors of the Sun Oil Co. declared a 9 per cent dividend in common stock on the common payable December 16 to stock on record November 25, this dividend being in addition to the regular quarterly dividend of 25 cents on the common and $1.50 on the preferred previously announced. The Sun company for the past several years has paid annually a stock dividend to common shareholders in addition to the regular cash disbursements. A stock dividend of 9 per cent was paid last year, 6 per cent in 1928 and 3 per cent in 1927.

Atlantic Refining

Atlantic Refining Co. and subsidiaries report for the nine months ended September 30, 1930, net profit of approximately $4,844,000 after depreciation, depletion, taxes, intangible development costs, etc., equivalent to $1.80 a share (par $25) on 2,691,111 average common shares outstanding during the period. This compares with $13,687,000 in first nine months of 1929, equal after six months' dividend requirements on 7 per cent preferred stock, to $5.48 a share on average common shares outstanding and $4.86 a share on 2,670,551 shares outstanding at end of that period.

Net profit for quarter ended September 30, was approximately $2,025,000 after all charges and taxes, equal to 75 cents a share on 2,696,642 shares comparing with $1,694,523 or 63 cents a share on 2,696,581 shares in preceding quarter and $4,824,591 or $1.81 a share on 2,670,551 shares in third quarter of previous year.

American Natural Gas

American Natural Gas Corp. has declared the regular quarterly dividend of $1.75 on the preferred stock, payable November 1 to stock of record October 20.

Burmah Oil

Burmah Oil Co. declared interim common dividend of 10 per cent, same as last year at this time.

Pierce Petroleum

Pierce Petroleum Corp. declared an initial dividend of 10 cents on the common stock, payable November 15 to stock of record November 1. Earlier this year the company sold its properties to Sinclair Consolidated Oil Corp., receiving in exchange Sinclair common stock, which constitutes its only asset.

WAGGONER INCREASING PLANT

The Waggoner Refining Co., having a 3,500-bbl. capacity plant at Electra, Tex., has begun the construction of additional stills and equipment to increase its daily capacity up to 6,500 bbls. per day. Crude oil for this plant is coming from Waggoner leases in Wichita and Wilbarger Counties, and the manufactured products are being sold in Wichita Falls and Fort Worth, Tex. The company has a marketing organization called the Three D's Products Distributors, Inc., and 17 service stations in Fort Worth.

GEORGE L. MORTON DIES

NEW YORK, Oct. 21.—George L. Morton, vice president of the Galena Oil Corp. and former speaker of the North Carolina House of Delegates, died in the Hotel Commodore here yesterday following a heart attack. Mr. Morton was a director of the Galena Oil Corp. and of the Galena Signal Oil Co. Furneral services will be held at Wilmington, N. C., October 23.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended October 15 Sales	Week ended October 15 High	Week ended October 15 Low	Week ended October 15 Close	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
⅜	⅛	800	⅛	⅛	⅛	American Consolidated Oilfields		$11,018,000	$5	....	.....	2⅞	.55	1½	.53	72c	⅛
4½	1¼	100	1¼	1¼	1¼	American Maracaibo	(sh)	700,000	N.P.	....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
1⅜	1	300	1⅛	1⅛	1⅛	Argo Oil	(sh)	683,971	$10	....	.....	2¾	1	4½	2¼	5	1½
21	17	100	17	17	17	British American		1,311,321	N.P.	25cQ*	7- 2-30	40	20½	55	32¾	62	7⅞
2¾	⅜	1,000	1½	1½	1½	Caribbean Syndicate		$131,250	25c	....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	22¼	x17,900	25¼	24¾	25	Cities Service	(sh)	24,290,359	N.P.	30cA†	9- 1-30	58¾	40½	90⅞	54	68⅛	20
93⅞	88	x400	91½	91½	91½	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	9- 1-30	95⅝	87	103½	94½	98¾	84
¾	⅛	200	¼	¼	¼	Colombia Syndicate		$2,000,000	$1	....	.....	3⅞	1⅛	3¼	.76	2	½
5⅞	3	100	3	3	3	Consolidated Royal		$5,000,000	$10	12½cQ	7-25-30	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	4½	4,300	4½	4⅜	4½	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	500	¼	¼	¼	Crown Central	(sh)	587,000	N.P.	....	.....	3	.50	3¼	.76	2½	¼
21⅞	6½	500	8½	8	8½	Darby Petroleum (new)		1,019,392	N.P.	50cQ	7-15-30	12	4	33½	3¼	26	6½
11	4½	300	4⅞	4⅞	4⅞	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2½	74	2¼	1	11	2
60	30	50	42	42	42	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	16¾	4	21½	7½	44	20¾
166⅞	89⅛	1,100	93⅞	91¼	93	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	7- 1-30	118	86¼	165	101⅜	209	115
1¾	½	800	⅝	½	½	Intercontinental Petroleum (new)		$5,682,000	$5	....	.....	2½	.80	3⅜	1	2⅞	⅜
3	1⅛	1,000	1½	1⅛	1⅛	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4¾	1	400	1⅛	1⅛	1⅛	Leonard Oil & Development		$50,000,000	$25	....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
29	9½	1,600	11½	11⅜	11½	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	7-28-30	27½	20	43⅞	20	38⅞	18
55⅞	28	1,900	30	28	30	Lone Star Gas (new)	(sh)	5,000,000	N.P.	25cQ	6-30-30	59¾	37	69⅛	48½	67⅞	28
½	⅛	900	3/16	3/16	3/16	Magdalena Syndicate	(sh)	850,000	$1	....	.....	2⅞	.80	1⅞	.50	1¼	⅛
16	6	100	6	6	6	Margay Oils		160,000	N.P.	....	7-10-30	52	12	48½	32	38½	14
7½	2	600	3	3	3	Mexico-Ohio Oil		.....	...	....	.....	12⅛	5	8	2¾	6⅜	2½
¾	⅜	100	½	⅜	½	Mountain & Gulf		$4,000,000	$1	40cQ	7-15-30	1½	1	1¾	.76	1½	¼
12⅛	7	1,700	7	6⅝	6⅝	Mountain Producers		$1,682,182	$10	40cQ	7- 1-30	29¼	22¾	28⅞	19½	22⅞	7
3½	2	200	2	2	2	New Bradford Oil		$1,095,291	$5	12½cQ	7-15-30	5⅞	4⅝	5⅝	4¼	5	2½
7¼	2½	1,200	2⅞	2½	2½	New Mexico and Arizona		$1,000,000	$1	....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	4½	200	4⅝	4½	4½	North Central Texas	(sh)	400,000	N.P.	15cQ	9- 2-30	12¾	9½	14¼	8½	18½	6⅛
2½	¼	500	5/16	5/16	5/16	Pandem	(sh)	489,875	N.P.	....	.....	9⅜	3¼	6	2⅛	3½	½
4⅞	1⅝	100	2⅛	2⅛	2⅛	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	12⅛	7	15⅝	8½	10½	1⅞
..	..	No sales.				Pennok Oil		150,000	N.P.	....	.....	12½	5⅛	7¾	4⅞	7¾	4⅜
10½	8	400	8	8	8	Red Bank Oil	(sh)	250,000	N.P.	....	.....	24⅜	7	18	4⅞	16	9⅝
5⅝	2	100	2½	2½	2½	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	15½	3½	12⅞	4⅛	8½	1⅛
8⅝	2½	400	2⅝	2⅝	2⅝	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	7	4½	12	4⅛	11	3
2½	1⅜	300	1¾	1⅜	1⅜	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	7- 1-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	8	x1,500	8½	8	8⅜	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	8- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	....	.....	7	1¼	3½	1	2½	⅝
4½	1⅝	300	1¾	1¾	1¾	Venezuelan Petroleum	(sh)	755,090	$5	5cQ	2-15-30	7⅜	4¼	9⅛	4¾	6½	1¾
5	2	1,200	3¾	3⅛	3⅛	Woodley Petroleum		$500,000	$1	15cQ	3-31-29	7	4¾	8¼	4⅞	9½	2
2½	½	100	⅞	⅞	⅞	Y Oil & Gas		100,000	N.P.	....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended October 15 Sales	Week ended October 15 High	Week ended October 15 Low	Week ended October 15 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
18½	12¼	400	18½	18⅜	18½	Anglo-American Oil (vot. C.O.D.)		£4,192,635	£1	.36⅛	.....	21⅝	17⅞	22⅜	14⅞	17	11
1	⅝	500	½	⅝	⅝	Atlantic Lobos		.....	...	....	.....	..	..	..	..	..	..
25	14	100	16	16	16	Borne Scrymser		$1,000,000	$25	$18A	10-15-29	59	50	56½	44½	46½	25
69	51	400	53	51	51	Buckeye Pipe Line		$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74½	55
184⅞	120¼	400	130	120¼	130	Chesebrough Mfg.		$3,000,000	$25	$1Q*	7-30-30	126	76½	161	117	210	130
65¾	29⅜	300	30	29⅜	29⅜	Cumberland Pipe Line		$1,500,000	$50	$1Q	9-15-30	137	89	114	67	75¾	40
54¾	35	100	35	35	35	Eureka Pipe Line		$5,000,000	$100	$1Q	8- 1-30	68½	47	88	64⅛	70½	42
7	2½	200	3½	3½	3½	Galena Signal Oil		$16,000,000	$100	....	.....	13½	3½	13	4¼	6½	3
119	74⅜	1,400	75⅞	74⅜	75	Humble Oil & Refining		$74,103,300	$25	50cQ	7- 1-30	68½	54	114¾	59¼	128	74⅛
320	303	100	320	315	315	Illinois Pipe Line		$20,000,000	$100	$10SA	9-15-30	182	123¾	290½	176½	340½	260
30	16	2,200	17	16⅜	16⅞	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	9- 2-30	64¾	37¾	104	56¾	41	22
41	27	200	28	27	27	Indiana Pipe Line		$3,000,000	$10	50cQ‡	8-15-30	94½	61	91⅞	74⅜	41⅞	26
24	13⅞	6,700	14¾	14½	14¾	International Petroleum	(sh)	14,247,088	N.P.	12½cQ	6-16-30	29	28¼	55	35	30⅜	15
22⅝	13¾	600	15	14½	15	National Transit		$6,362,500	$12.50	25cQ‡	9-15-30	24	13½	32⅝	19⅜	25⅛	10⅛
21⅜	10⅛	700	12⅞	11⅛	11¾	New York Transit		$1,000,000	$10	40cQ†	4-15-30	44½	31¼	75	38½	17½	10
54	30⅛	200	30⅝	30⅛	30⅛	Northern Pipe Line		$2,000,000	$50	....	7- 1-30	100	70	69	56½	63	41
108	103	....	..	..	..	Ohio Oil Co.		$60,000,000	$100	$6	.....	..	..	..	..	105	103¾
32	17	2,200	20⅛	20	20	Penn Mex Fuel		$10,000,000	$25	50cQ	8-22-30	39	12	84	28	44½	20
33	9½	100	9⅛	9⅛	9⅛	Solar Refining		$4,000,000	$25	$1.25SA	6-30-30	..	..	..	..	50	29
20⅞	10	100	11⅞	10	11⅞	Southern Pipe Line		$1,000,000	$10	5cQ	6- 2-30	27¼	15½	19	15	22½	13
45⅞	25	200	28⅝	28⅝	28⅝	South Penn Oil (new)		$30,000,000	$25	50cQ	6-30-30	41½	35	71⅞	36¾	60¼	35⅛
65	35	100	45¼	45¼	45¼	Southwest Pennsylvania Pipe Lines		$1,750,000	$50	$1Q	1-10-29	83	55½	102	70	70	60
59⅞	41	9,900	42⅞	41⅛	42½	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	9-15-30	81½	64⅜	95⅞	70⅞	63	45
40½	26	1,900	26⅞	26⅛	26½	Standard Oil of Kentucky		$25,654,516	$10	40cQ	8-30-30	130	111½	179⅜	122¼	46⅞	29
48⅞	44⅛	100	45⅝	45⅝	45⅝	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	9-20-30	49½	40	54⅞	39⅞	50¼	40
108½	64	100	64½	64½	64½	Standard Oil of Ohio		$14,000,000	$25	62½cQ	7- 1-30	87½	72	134	71	129	60
10	5	100	5	5	5	Swan-Finch Co.		$861,466	$25	.43¾cQ	9- 3-30	21	14½	23⅛	16	18	10
97⅞	65	2,800	66⅛	65	65¼	Vacuum Oil Co.		$126,180,350	$25	$1Q	9-20-30	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended October 15 Sales	Week ended October 15 High	Week ended October 15 Low	Week ended October 15 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	x1,200	23⅛	22¼	23⅛	Amerada Corp.	(sh)	922,075	N.P.	50cQ	7-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
37	11	900	13⅝	11½	13⅝	American Republic Corp.	(sh)	209,180	N.P.	....	.....	82½	35⅛	85	51⅛	64¾	12½
51	32½	10	39½	39½	39½	Associated Oil		$57,260,300	$25	50cQ	9-30-30	50¼	35	53⅜	37½	47¼	34½
61¾	22⅝	6,300	25⅛	24	25⅛	Atlantic Refining		$66,763,775	$25	25cQ†	9-15-30	131⅜	104	66⅜	50	77⅞	30
34	15⅝	4,600	17½	16½	17½	Barnsdall Corp. A		$56,546,600	$25	50cQ	8- 6-30	35½	20¾	54	20	49⅛	20
30½	12¾	4,000	14⅜	13⅞	14¼	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	..	..	47⅛	18
71⅛	30	3,100	32½	30	32	General Asphalt	(sh)	413,333	N.P.	$1Q	9-15-12	96¾	65	94⅞	68	94¾	42¼
116⅞	50⅝	7,300	57⅜	53⅝	56⅞	Houston Oil		$24,968,600	$100	....	.....	175¾	60⅛	167	79	109	26
32	15⅝	7,000	16¾	16	16¾	Independent Oil & Gas	(sh)	1,362,295	N.P.	50cQ	7-31-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
28⅜	6½	12,200	8¼	7⅝	7⅝	Indian Refining		$12,565,070	$10	....	.....	12⅛	7⅝	39⅝	9	53	13⅛
29½	21¼	1,800	27⅛	27⅛	27⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	....	5- 2-27	37¾	20½	39⅛	27⅜	38⅜	16½
12	6⅛	400	6¼	6⅛	6¼	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	2⅜	400	3	3	3	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	22¾	12	25½	12½	18½	5⅛
37	15	14,200	17⅜	16⅜	17	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	9¼	3	72	4⅝	59⅜	8¼
33	18	x2,500	20	18⅝	19⅜	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	7-15-30	39⅜	25½	44½	25⅛	39⅞	22⅛
..	..	No sales.				Middle States ctfs.		$23,736,130	$10	....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
33	22	4,100	22⅞	22⅜	22⅞	Ohio Oil		6,648,052	N.P.	50cQ	9-15-30	67⅞	52	84	58½	79⅞	64¼
64¼	48	100	48½	48½	48½	Pan American P. & T.		$50,084,700	$50	....	12-20-27	65⅞	40⅛	50⅞	38¼	69	40½
67½	47⅜	300	49½	49½	49½	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	66⅜	40¼	58⅞	37⅜	69¼	40½
..	..	No sales.				Pan American Western "B"		400,000	N.P.	....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	3⅛	1,900	3⅝	3⅛	3⅛	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	200	51	51	51	Panhandle P. & R. pfd.		$2,564,400	$100	....	7- 2-23	83	54	108	70	76	47½
44¾	21	10,500	22½	21¾	22½	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	6-30-30	60¼	36¼	53⅞	35¼	47	24¼
2½	¾	900	1	1	1	Pierce Oil Corp.		$29,622,831	$25	....	.....	1⅛	½	5¼	½	3⅜	1
7⅛	2¼	1,200	3¾	3⅛	3¾	Pierce Petroleum	(sh)	2,500,000	N.P.	....	.....	5½	2½	7	3½	5⅞	½
54	22	700	27½	27	27⅛	Prairie Oil & Gas		$60,848,000	$25	50cQ*	6-30-30	55½	45⅝	68	46	65⅝	40½
60	27⅞	2,900	29⅛	28⅞	29	Prairie Pipe Line		$101,250,000	$25	75cQ†	6-30-30	190	130¾	280	172	65	45
11⅞	4⅛	400	4¼	4¼	4¼	Producers & Refiners		$37,438,950	$50	....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	25½	50	25½	25½	25½	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	50	36⅞	49⅝	41	46¾	25½
27¼	16⅛	2,600	17	16⅜	16⅝	Pure Oil		$75,959,250	$25	37½cQ	9- 1-30	33½	25	31⅝	19	30⅜	20
8¾	7⅜	2,700	8⅛	7¾	8	Richfield Oil		$52,410,875	N.P.	....	9- 1-30	28⅝	25⅜	56	23	49⅝	20
25¾	8⅝	1,700	9⅛	8¾	9⅛	Rio Grande Oil	(sh)	1,236,270	N.P.	$2A	7-25-30	..	..	37½	32	42½	15
56½	43	1,900	44⅞	43¾	44¾	Royal Dutch, N. Y.	(sh)	611,303	...	$1.875	8-13-30	54½	44¼	64	44⅝	64	43⅛
48⅜	37½	50	37⅞	37⅞	37⅞	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7- 8-30	48⅝	40½	47⅞	41⅜	51½	40⅝
25½	10½	2,600	10¾	10⅛	10¾	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	31¾	23⅝	39¼	23¼	31⅜	19
37	12¾	300	13½	13	13½	Simms Petroleum		$8,353,620	$10	40cQ	9-15-30	25⅜	14¼	27¼	18⅛	40⅛	15
32	15	12,350	15⅝	15⅛	15¼	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	7-15-30	22⅜	15	46¾	17⅜	45	21
112¼	106	200	109¾	109¾	109¾	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	7-15-30	104½	97	110	102½	111	103
42	20	1,600	20¼	20⅛	20⅛	Skelly Oil		$27,441,250	$25	50cQ	9-15-30	37⅜	24⅛	42⅝	25	40½	28
75	52⅛	4,400	54⅜	53⅛	54¼	Standard of California	(sh)	12,594,098	N.P.	62½cQ	9-15-30	60¾	50⅜	80	63	81⅞	51½
49	19	600	22¼	21¼	22¼	Standard of Kansas		$8,000,000	$25	50cQ	9-15-30	20⅞	14⅝	37¾	15	33⅜	18
84⅞	55⅛	32,000	59⅜	56⅝	59⅛	Standard Oil of New Jersey		$634,999,200	$25	25cQ*	9-15-30	41⅜	35⅛	59⅜	37¾	83	49
40⅜	20½	7,200	27½	26¾	27½	Standard Oil of New York		$445,223,675	$25	40cQ	9-15-30	34⅛	29¾	33¼	28¾	48⅛	31¾
70	60	200	52½	52½	52½	Sun Oil	(sh)	1,416,869	N.P.	25cQ	9-15-30	34⅞	30	77	31½	68⅜	55
9⅜	1½	1,000	1⅞	1⅝	1⅝	Superior Oil Corp	(sh)	776,979	N.P.	....	12-20-20	..	..	..	..	24	5¼
60½	42½	6,600	44¼	43⅜	43⅞	The Texas Corp.		$246,204,900	$25	75cQ	7- 1-30	58	45	74¾	50	71⅞	50
14½	6	400	6½	6⅜	6⅜	Texas Pacific Coal & Oil Co.		$9,304,890	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9½
31	15⅛	100	15½	15⅛	15⅛	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	6-30-30	29⅛	19	41½	19⅝	40	14
94⅞	83	400	85	85	85	Tide Water 5% pfd		$19,947,000	$100	$1.25Q	9-15-30	90⅛	85	100⅛	86	97½	85⅛
17¾	10	5,900	10¾	10½	10½	Tide Water Associated	(sh)	5,560,424	N.P.	30cS	8-15-30	19⅛	15¾	25	14¾	23½	10
89¾	72	200	72	72	72	Tide Water Associated pfd.		$73,284,500	...	$1.50Q	7- 1-30	..	..	..	..	90⅞	74⅛
50	28⅝	120	32¾	32¼	32½	Union Oil of California		$104,342,375	$25	50cQ	8- 9-30	56½	39⅝	58	42⅜	57	42⅛
38½	25⅛	400	26	26	26	Union Tank Car (new)	(sh)	1,254,048	$100	$1.25Q	1- 2-30	127½	94	128⅛	110	163¾	121⅞
27	7½	1,100	7½	7½	7½	Warner-Quinlan	(sh)	632,948	N.P.	50cQ	7- 1-30	34½	24½	44⅞	26	42⅞	15
..	..	No sales.				White Eagle Oil & Refining	(sh)	505,100	N.P.	50cQ	1-20-30	27½	20	38	20⅛	38	25
21	11	700	11	11	11	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

NATURAL GAS INDUSTRY IS STILL EXPANDING

(Continued from Page 34)

State, Michigan, was the average value above $1 per 1,000 cubic feet in 1929. Domestic consumers in West Virginia paid the lowest price for gas—34.6 cents per 1,000 cubic feet.

The consumption of natural gas for field purposes easily retained first rank among the various classes of consumption. During 1929 a total of 705,083,000,000 cubic feet was utilized in the operation of natural gasoline plants and burned under boilers or used as fuel for gas engines incident to the drilling and pumping of wells. The increase in field consumption in 1929 checks quite closely with the increase in number of wells completed and with gains made in natural-gasoline production. Oklahoma and California were the leading users of gas for field purposes in 1929. Texas, the leading State from the standpoint of completions in 1929, was third, an explanation of which might be a more widespread use of oil for fuel in that State.

The use of natural gas in the manufacture of carbon black ranked next to field use in importance in industrial use. This accounted for a consumption of 261,107,000,000 cubic feet in 1929, an increase over 1928 of 49 per cent. As was predicted a year ago, Texas became the leading carbon-black producing State in 1929. The production of carbon black in the Panhandle in 1929 was more than three times the 1928 total and, since the status of the industry in Louisiana was practically unchanged, the center of carbon black manufacture moved from Monroe to Amarillo.

A further decline in the use of natural gas as refinery fuel was noted in 1929 when the total consumed was 103,729,000,000 cubic feet as compared with 114,950,000,000 cubic feet in 1928. Although in some cases the price situation may have been a factor, the chief reason underlying the decreased use of natural gas by refineries was an increase in the supply of other fuels, notably fuel oil and refinery gas. Fuel oil was very low in price in 1929 and some of it, particularly residual fuel oil from cracking stills, could not be disposed of except as fuel under boilers and stills. Furthermore, increased cracking and more efficient refining methods led to a material gain in the recovery of still gas and to a similar increase in its use as refinery fuel.

The United States Geological Survey reports the consumption of natural gas as a fuel in the generation of electric power by public-utility plants in 1929 as 112,707,000,000 cubic feet, an increase over 1928 of 35,381,000,000 cubic feet, or 46 per cent. Texas continued to rank first from the standpoint of natural gas used in the generation of electricity, although other states made larger gains in 1929.

Average Price

The average price paid for natural gas at the wells in 1929 was 8.2 cents per 1,000 cubic feet as compared with 8.9 cents in 1928. This decline reflected the material increase that occurred in the use of low-priced gas in carbon black manufacture in the Texas Panhandle. At points of consumption, the average price of natural gas in 1929 was 21.6 cents per 1,000 cubic feet as compared with 23.2 cents in 1928 and 22 cents in 1927. This decrease, coming after two years of successive increases, was also a reflection of the decline in value in Texas.

Interstate transportation of natural gas grew rapidly in importance in 1929 following the completion of several large lines traversing a number of states. The total transported between states in 1929, that is, from the state of origin to the state of final distribution, amounted to 325,021,000,000 cubic feet. This is equivalent to 17 per cent of the total production and represents an increase over 1928 of 35 per cent. The movement of gas from West Virginia to consuming centers in Ohio continued to be the largest single item, although other interstate movements, for example, those from Texas to Oklahoma and from Louisiana to Texas, showed larger increases in 1929.

MAJORS AND MINORS CUT TEXAS-OKLAHOMA PRICES

(Continued from Page 31)

Montague County, all of which is purchased, and 619 bbls. of purchased oil from Cooke County. The company does not buy in the Panhandle district.

Old and New Prices

Following are the schedules of all purchasers in the areas named.

Degrees gravity—	Wichita, Archer, Wilbarger and Northern Young Counties* Old price	Wichita, Archer, Wilbarger and Northern Young Counties* New price	Gray County Old price	Gray County New price	Carson and Hutchinson Counties Old price	Carson and Hutchinson Counties New price
Below 25	$0.72	$0.65	..	..	..	..
25 to 25.9	.77	.65	..	..	..	..
26 to 26.9	.82	.65	..	..	..	..
27 to 27.9	.87	.65	..	..	..	..
28 to 28.9	.92	.65	$0.75½	$0.60	$0.77½	$0.55
29 to 29.9	.97	.69	.80½	.64	.77½	.59
30 to 30.9	1.02	.73	.85½	.68	.77½	.63
31 to 31.9	1.07	.77	.90½	.72	.77½	.67
32 to 32.9	1.12	.81	.95½	.76	.82½	.71
33 to 33.9	1.17	.85	1.00½	.80	.87½	.75
34 to 34.9	1.22	.89	1.05½	.84	.92½	.79
35 to 35.9	1.25½	.92	1.09	.87	.96	.82
36 to 36.9	1.29	.95	1.12½	.90	.99½	.85
37 to 37.9	1.32½	.98	1.16	.93	1.03	.88
38 to 38.9	1.36	1.01	1.19½	.96	1.06½	.91
39 to 39.9	1.39½	1.04	1.23	.99	1.10	.94
40 to 40.9	1.43	1.07	1.26½	1.02	1.13	.97
41 to 41.9	1.46½	1.10	1.30	1.05	1.17	1.00
42 to 42.9	1.50	1.13	1.33½	1.08	1.20½	1.03
43 to 43.9	1.53½	1.16	1.37	1.11	1.24	1.06
44 and above	1.57	1.19	1.40½	1.14	1.27½	1.09

*Prices in first and second column extended by Magnolia Petroleum Co. and Stanolind Crude Oil Purchasing Co. to also include Limestone and Navarro Counties and to all pools in North and Central Texas in which they purchase oil on a gravity basis.

President Farish's Statement

Accompanying the announcement of the price changes was the following statement by W. S. Farish, president of the Humble Oil & Refining Co.:

"Proration involves co-operative effort between the industry and conservation authorities, state and national, to prevent waste in the production of oil and gas, and when successfully attained, results in bringing production in all areas into balance with the demand therefor. The practice of proration in new fields and unit pool operation alike make for reduction of producing costs; and when progress is made along these lines and supply and demand are balanced with producing costs reduced, it is manifest that both the public and the industry must benefit.

"In no sense, however, does proration freeze prices or otherwise interfere with the free play of competitive forces. Competition will always exist between oils of different grades from different pools and in different localities.

"When any considerable amount of oil is being sold from any field at less than the posted price (as is now the case in certain areas) the lower price establishes the market and readjustment of the posted price in the particular field must inevitably follow.

"We cannot continue to pay more for crude than others are paying.

"In view of the fact that crude oil from North Texas and Panhandle Fields is being sold below our posted price we have no alternative but to meet such lower price by posting in these two fields effective today the attached schedule."

Affects 140,500 Bbls.

About 140,500 bbls. of daily production in the seven counties named by the Humble is affected by the new price schedule, as follows in round numbers: Wichita County, 23,000 bbls.; Archer County, 14,500 bbls.; Wilbarger County, 17,000 bbls.; North Young County, 8,000 bbls.; Carson County, 7,000 bbls.; Gray County, 55,000 bbls., and Hutchinson County, 16,000 bbls.

Gray County producers are affected at the rate of about $13,475 per day; Carson and Hutchinson Counties $3,150 per day; Wichita, Wilbarger, Archer and North Young Counties $21,875 per day, a total reduction in crude oil values of $38,500 per day, based on current production.

The American Refining Properties of Wichita Falls, Tex., started a price reduction in the Duncan area in Stephens County, Oklahoma, on Saturday, October 18, with a general change in prices starting at 26 and below which it quotes at 50 cents, with a 5-cent differential for each degree from 26° to 32° inclusive, which is posted at 80 cents. For each degree above 32 a 3-cent differential is posted up to 44 and above at $1.16. This is a cut averaging 37 cents per barrel based on the weighted average of 36 gravity for Duncan crude. The company's old price for 36 gravity oil was $1.29 and the new price 92 cents.

The White Oak Refining Co. which has a 6,000-bbl. refinery at Allen, Okla., and buys oil in the Oklahoma City and the Greater Seminole areas, shipping it by tank car to Allen, on October 20, posted a flat price of 75 cents per barrel for oil of all gravities. The company buys from 3,500 to 4,500 bbls. a day in Oklahoma City and 2,500 to 3,500 bbls. a day in Seminole. The company's purchasing agency is the Crude Oil Transportation Co.

OIL PRORATION IS AN ENGINEERING PROBLEM

(Continued from Page 30)

will be universally introduced that will limit the demand for gasoline for power purposes and this time element set up against our present abundant supply of crude oil represents a very short period.

The industry is now at the crest of its production and exploration period and for a few years it must be contented to supply what is actually needed for immediate consumption and for this reason the proration of supply seems very necessary and desirable.

The arguments that are advanced that proration is leaving vast amounts of oil in the sand that can never be recovered are harly tenable for they may be directly compared with the older methods of production that left large quantities of oil in the older fields that is now being produced by water flooding, repressuring and other methods.

Consider the Bradford Field of Pennsylvania as an example. In that field the flush production period produced so much oil that it was sold at 10 cents per barrel at times, and again it had a market of $5 per barrel, but it was later found that vast quantities had been left underground and by the application of engineering methods that had been developed this field is now back to a point where it is actually overproducing its type of oil and is subject to proration like all other major territories.

The agitation that has been created be-

SUMMARY OF NATURAL GAS STATISTICS, 1929

State—	Production: Quantity (millions of cu. ft.)	Production: Estimated average value at wells per M.C.F. (cents)	Production: Average value at points of consumption M.C.F. (cents)	Consumption: Domestic: Thousands of consumers	Consumption: Domestic: Consumption (millions of cu. ft.)	Consumption: Domestic: Average value at points of consumption M.C.F. (cents)	Consumption: Industrial: Field (drilling, pumping, operating gasoline plants, etc.): Millions of cu. ft. (estimated)	Consumption: Industrial: Field (drilling, pumping, operating gasoline plants, etc.): Value thousands of dollars (estimated)	Consumption: Industrial: Manufacture of carbon black: Millions of cu. ft.	Consumption: Industrial: Manufacture of carbon black: Value at points of consumption thousands of dollars	Consumption: Industrial: Fuel at petroleum refineries, fuel at electric public utility power plants, and other industrial: Millions of cubic feet: Petroleum refineries	Electric public utility power plants	Other industrial	Value at points of consumption (thousands of dollars)*
Arkansas	19,928	6.5	19.1	62	7,535	48.6	15,221	$1,274	.....	.....	4,548	1,222	11,232	$2,652
California	342,214	8.5	20.2	1,239	43,499	86.9	216,537	18,409	.....	.....	17,205	26,914	38,259	12,778
Colorado	2,787	2.5	24.2	77	2,731	92.4	840	27	.....	.....	5	.....	10,796	1,988
Illinois	2,983	10.3	13.0	13	94	84.0	2,895	297	.....	.....	.....	.....	150	32
Indiana	1,012	38.8	51.2	16	696	64.8	23	3	.....	.....	.....	.....	1,646	881
Kansas	38,469	7.8	34.9	170	15,539	60.4	11,990	1,470	.....	.....	6,231	11,288	30,428	7,946
Kentucky	27,588	12.7	32.0	157	11,501	45.5	1,291	162	.....	.....	.....	.....	6,652	1,641
Louisiana	261,138	3.0	10.1	115	7,917	54.0	25,030	1,006	103,846	2,355	16,971	17,284	29,729	7,791
Michigan	4,526	9.9	19.9	11	342	104.1	520	51	.....	.....	.....	.....	3,664	493
Mississippi	90	7.8	35.6	4	518	45.2	4	1	.....	.....	.....	33	19	11
Missouri	324	9.9	50.6	121	7,224	85.5	12	2	.....	.....	.....	456	7,386	1,557
Montana	9,659	4.2	24.6	15	3,033	42.5	1,008	115	2,142	43	248	571	2,330	559
New Mexico	3,054	5.0	17.6	2	181	65.2	555	33	.....	.....	.....	25	260	89
New York	8,387	33.2	66.0	248	16,531	67.3	269	96	.....	.....	250	23	1,119	833
Ohio	57,936	16.6	56.8	1,214	88,169	63.8	5,117	1,448	.....	.....	13	4,070	29,262	14,662
Oklahoma	357,893	6.6	15.0	225	31,263	44.6	247,539	23,150	(†)	(†)	15,189	8,606	†26,698	†6,526
Pennsylvania	101,951	27.6	47.9	634	53,223	61.5	6,929	2,118	.....	.....	939	69	61,716	22,075
South Dakota	99	8.1	40.4	4	370	62.8	.....	.....	.....	.....	.....	.....	847	150
Tennessee	25	8.0	44.0	36	1,311	97.6	(†)	(†)	.....	.....	.....	3 392	†692	†902
Texas	464,928	3.3	14.5	503	38,830	64.1	128,464	14,067	150,975	2,583	26,115	38,365	82,787	24,049
Utah	693	2.0	29.6	36	397	89.7	.....	.....	(†)	(†)	.....	.....	†1,142	†100
West Virginia	167,333	17.6	44.1	185	24,921	34.6	18,844	3,722	342	48	1,684	153	27,912	7,628
Wyoming	44,648	3.7	8.6	15	2,877	46.6	22,207	900	(†)	(†)	14,331	236	†3,849	†1,197
Other	28	7.1	26.0	14	651	81.9	8	1	3,802	79	.....	.....	205	61
Total 1929	1,917,693	8.2	21.6	5,116	359,853	62.0	705,083	68,352	261,107	5,108	103,729	112,707	374,972	116,521
Total 1928	1,568,139	8.9	23.2	4,344	320,877	62.0	573,698	58,356	175,137	4,321	114,950	77,326	305,991	102,146

*Includes value of gas used at refineries and at public utility power plants. †Included under "Other" and duplicated under "Total Industrial" to avoid revealing figures of individual operators.

cause of proration has led to a great many statements being made that are for the most part based purely upon opinion and cannot be proven except by allowing time to elapse in which to demonstrate what effect shutting in wells will have upon the ultimate production of the well or the field.

In Oklahoma City Field there are nearly as many advocates of different ideas as there are companies, for each production man will view the problem in the light of his own personal knowledge and while this experience is to be respected it will take time for any of the theories to be tried out.

Some wells there do not flow oil for several hours after they are opened up during their period of prorated flow and therefore do not produce anything like the amount of oil that they are expected to during their allowable proration time.

With a rock pressure of upward of 2,000 pounds in the sand it seems difficult to explain why gas should accumulate in the hole to such a great extent and hold back the oil for 75 per cent of the allotted flow period. This condition does not hold true of all parts of the field for other wells when shut in will begin to produce oil very quickly after they are opened, and indicate that the shut-in well builds up oil and gas to a high fluid level in the well.

There are two types of producing formations in the Oklahoma City Field which have been very definitely outlined by sand studies of cuttings and maps have been made that record this information in a very definite manner.

Water Encroachment

A study of such maps will be most enlightening for they show that in the Arbuckle limestone areas, covered by the older wells in the field, the water encroachment has been rapid and is completed. All wells in the lime show some water.

In the sand bodies that lie around the south, west and north flanks of this old limestone hill water has been encountered in several wells in every direction from the center of the field where production is found. It is true that only a few wells producing from the Wilcox sand zone now make water, but those few do indicate positively that water is underlying the oil in these sand bodies.

It therefore follows that to produce these wells with unrestricted flow would be to create a coming of water in them in a varying amount of time depending upon the location of the well upon the structure. But it can be said quite definitely that water would take the sand wells, just as it has taken the lime wells, if they were allowed to flow wide open.

Some engineers are therefore of the opinion that shutting in these wells is a distinct benefit for by so doing pressures underground are permitted to equalize and water is held back from the hole and oil driven in by the movement of gas as well as by the pressures exerted by the water next to the oil.

In the Seminole area much engineering data have been prepared and studied to determine the effect of proration upon wells in that area and the engineers cannot agree upon the proper answer. Again it is a matter of personal opinion based upon the knowledge of the individual.

A study of the water map of the Seminole fields as prepared by the United States Bureau of Mines in its Report of Investigations on the Seminole Fields shows that water has advanced rather evenly from the edges of the various pools up the structure and all engineers admit that this is proper and if this rate of water encroachment can be controlled the oil is being recovered in as large a measure as our present science of production will permit.

The recovery of oil per acre in the Seminole area has been very large, varying all the way from 30,000 bbls. up to over 100,000 bbls. per acre, and this variation is dependent upon the location of the well upon the structure, the time of drilling and the method of production followed. In any event it is a much larger recovery than that usually made from oil pools and whether it is attributed to production methods involving gas lift or to sand conditions the fact remains that a large amount of oil has been recovered and sold and the wells are still able to produce more than their prorated share of Oklahoma's production.

Deferred Oil Production

It is argued by some that deferred oil is never recovered. This is a rather broad statement and must be considered from several angles to be properly analyzed.

If the sand is flooded with water it is generally agreed that the oil left behind cannot be recovered by any present known production method. It has been demonstrated in several pools that once the sand is filled with water repressuring does not secure any more oil.

But if this water encroachment is controlled and the oil is driven ahead of the water it is also agreed that the sands will be washed clean of their oil and the recovery will be practically completed. In most fields where engineers are now in charge this is the method of controlled production being followed, so to state that deferred production cannot later be secured will depend upon the thoroughness with which the engineer is doing his job.

If the oil can be recovered at a rate that will permit the holding back of the water while the crude is being recovered this is an ideal condition, and even though this rate of production may not equal a theoretical decline curve drawn for a lease or well still it may represent the economic limit of production for that area. By this it is meant that cost considered and present selling price for oil also taken into account, it may be better to defer production of vast quantities of oil at this time, and by so doing maintain a higher price for that crude which is produced.

Should it be decided to produce oil from the Oklahoma City Pool in an unrestricted flow and drain this pool just as quickly as possible it is undoubtedly true that the price of this oil would fall materially when it was forced upon a market already glutted with this commodity.

Cost of Development

In an estimate of the cost of developing this field it has been found that for the 7,000 acres that comprise it there will be approximately 800 wells drilled and at a cost of $155,000 per well this will represent an investment of approximately $124,000,000 and to this other expenses must be added so that the total cost of developing this field will be about $175,000,000.

If this 7,000 acres will produce 20,000 bbls. of oil per acre, under any production method, it will mean an ultimate recovery of 140,000,000 bbls. of oil. Of this total one-eighth must go to the royalty owner and 3 per cent is deducted for basic sediment, and an additional 3 per cent for state tax so the net oil to the producer is only 110,100,000 bbls.

For this 110,100,000 bbls. of oil to have a gross value of $175,000,000, it must sell for $1.58 per barrel and at that price no allowance has been made for lifting costs, interest on investment and other incidentals that must be deducted from gross income.

At this time this oil is worth about $1.39½ per barrel and it therefore seems impossible for the field as a whole to pay out on the total investment, but it is granted that individual leases have already produced sufficient oil to make a gross return equal to the investment.

The estimate of 20,000 bbls. per acre is high as shown from average pools in Oklahoma and to recover this amount of oil every precaution known to the production engineer at this time must be exercised. It is very safe to assume that it would not make this amount of oil if allowed to flow wide open even for a short period for water would come around the wells and cut off a large portion of the oil.

In analyzing the arguments advanced by the supporters of open flow production it will be noted that in practically every case they are assuming that they will be most fortunate and secure oil in sufficient quantities, even at a reduced price, to justify this procedure. They disregard the rights of others in the pool and do not give any consideration to a well-established fact in production engineering that the energy stored in the gas contained within the sand bodies is a source of energy common to all for the movement of all oil and if this is dissipated all will suffer a loss of oil recoverable.

California Proration Studied

In this week's issue of The Oil and Gas Journal there is a paper by Robert E. Allen, assistant umpire for the California proration committee, in which he deals with the control of California oil production and in his conclusions he states that it has been noted there that where proration has been applied to unit-controlled areas it has been beneficial rather than detrimental.

This leads to the conclusion that every owner of rights above an oil pool will be best protected if he will join with his neighbors in controlling the production from that pool and under such an agreement more oil will be recovered and at a lower cost than can be obtained by any other method.

From this line of reasoning it would seem that co-operation of operators in all prorated pools is most desirable and where this co-operation has been practiced it has been found very beneficial. In open session at the American Petroleum Institute division of production meeting held in Midland, Tex., in April it was stated by several operators in the various prorated pools of the Permian Basin area that they preferred proration to unit operation because under proration they still controlled methods of production just so they limited the amount of oil brought to the surface to the share allotted to them by the advisory committee for their area.

Co-operation Practiced

In several of these pools proration has been effective for a long time and it is generally conceded that it has been very beneficial so far as recovery of the oil is concerned, and it is very noticeable that all of the operators in these pools consult together to devise methods of production that are best suited to their particular pool.

In this way they are in effect acting as a unit although each operator does advance his ideas and discuss his theories with his neighbors and in this way has some control over the production methods adopted for his lease. But back of it all is that spirit of co-operation that is so essential to the whole industry today and without which only chaos will reign and the industry be demoralized.

With this vast sum of knowledge now accumulated and available to every operator it seems only reasonable that the best results will be obtained if these data are properly applied and in this direction it would seem lies the salvation of the industry, not in indulging in unrestricted competition for here again the company with the best equipment and skill will be the gainers in the long run and the unprepared and inefficient suffer.

With pools having the ability to produce oil at very low prices and others ranging upward to costs equal to or more than the present price of crude, there can be no equality in production conditions other than regulation of the amount of output from each field. On the basis of open competition between fields or states it must be admitted that some of the deep producing areas in Oklahoma would stand small chance of meeting prices for oil as produced from California fields, or from Yates and other limestone pools in the Permian Basin.

Proration Getting Results

Proration may be a drastic remedy but if the industry will not realize, as a whole, its own huge resources and ability to produce oil in quantities far in excess of any normal growth of consumption then it seems that for the time being it is the best thing that can be applied to curb the desire of man to bring about his own destruction by wasting a natural resource.

In the long run it is predicted that the newer generation now entering into this industry will give full consideration to the conditions as nature made them and treat an oil pool as a single unit that must be produced as a whole and the individual rights of the owners of surface property protected by this pooling of interests rather than fighting against nature's laws which man has never yet been able to conquer.

Proration is leading to unit operation very definitely, and, while progress is slow, this is simply another step in the evolution of the industry and by restricting flow of oil from the ground for a limited time the balance will again be established and in the long run everyone will benefit.

Arguments for and against the mechanics of proration may be advanced at this time in accordance with the opinion of the individual but it is safe to state that with the knowledge of production methods invested in the production superintendents and petroleum engineers employed by the oil companies little real damage will be done to the individual wells, leases or pools and at this time the producers who do not enjoy the services of trained men would do well to employ men who are available who have acquired specific experience in these problems, either as consulting engineers or on the regular pay roll to assist them in protecting their interests and by so doing will find that their problems are reduced to a minimum and their interests will be protected.

SAFETY IN PETROLEUM CRACKING OPERATIONS

(Continued from Page 38)

judgment, and a thorough knowledge of the requirements of the duty performed. Some knowledge of the behavior of metals under the conditions imposed, corrosion, temperature and pressure is necessary. The inspector should develop an experience record of depreciation and accidents, not only in his plant but in outside properties also.

Even for a thoroughly competent inspector, a definite outline for the procedure to be followed in making an inspection should be in effect and standard forms for the reporting of his findings should be used. Such reports will give a good picture of the condition of the plant at the time of the inspection and will in addition serve as a record of plant conditions for future inspections and compilation of data. A series of reports will be a valuable aid in determining the intervals at which inspections need be made of the various parts of the equipment and will also provide a means of anticipating the probable life so that materials for replacements can be secured in advance, thus obviating the need for shutdown of the plant which might otherwise be necessary.

An inspection of the cracking plant to be complete should include not only those parts which may contain or conduct oil and vapors and therefore subject to corrosion and erosion but also pressure and temperature instruments, mechanical equipment such as pumps and flue gas equipment, automatic and remote controls, furnaces, including brickwork, dampers and other auxiliary equipment, ventilation of inclosures, drainage about the process area, tankage and any other feature or equipment which may have a bearing on the safe operation of the plant. The requirements in connection with some of these will be touched upon in following paragraphs covering potential hazards.

No attempt will be made here to describe a procedure of making a complete inspection and to discuss the factors upon which recommendations for repair, replacement or renewals are based. Suffice to say that piping should be removed upon a reduction in thicknesss of a predetermined amount consistent with operating pressures, temperatures and respective pipe sizes, and that the maximum allowable operating pressure of a plant should be adjusted as the need demands based on the weakest element of the plant.

(To Be Continued)

EFFORT MADE TO CURTAIL VENEZUELA PRODUCTION

(Continued from Page 40)

two other leading American companies operating in Venezuela (aside from Lago) have sharply curtailed their output this year. All of the major interests in Venezuela have been working under an informal curtailment program during the past year, this program involving an agreement not to construct additional lake tankers. In addition, there has been an informal "gentleman's agreement" to limit new field work.

Production by the companies mentioned in Mr. Stewart's announcement for September of this year and the first nine months of the year, with comparisons for the corresponding periods last year, is compiled by O'Shaughnessy's Oil Bulletin as follows:

(Barrels of 42 U. S. Gallons)

	September		First 9 months	
	1930	1929	1930	1929
Lago	3,110,731	2,835,922	28,928,615	27,656,361
Gulf	1,858,441	2,324,200	17,035,145	22,779,500
Creole	496,353	651,600	4,249,455	5,566,331
Shell:				
V. O. C.	3,220,746	3,783,870	30,323,839	34,607,088
Carib Pete	2,005,950	1,521,090	15,640,029	9,180,907
Colon	419,554	.....	3,599,792	.....

Total production of crude in Venezuela during the first nine months of 1930 showed a slight decline over the output for the comparable period last year, at 101,753,901 bbls., against 101,557,464 bbls. for the first three quarters of 1929. This decline resulted from curtailment activities of Gulf and Creole.

Gulf during the first nine months of 1930 has reduced its Venezuelan production by approximately 25 per cent under 1929 totals, while production of Creole during the same period has shown a drop of approximately 23 per cent. During these same months, production by Lago has increased approximately 4 per cent over comparable 1929 totals, while output of Shell companies in Venezuela has increased by approximately 13 per cent over totals for the corresponding period in 1929.

Respective Production

It is evident from the foregoing figures that both Gulf and Creole have been quietly going ahead with their own plans for conservation in Venezuela while Shell and Lago, with the heavy requirements of their Dutch East Indies refineries in mind, have been extending their field operations. It is obvious, therefore, why the two other American companies operating on a large scale in Venezuela would be unwilling to enter into a compact calling for a further sharp cut in their operations when the other two principal operators in that country have continued to widen their operations.

While Lago's statement did not go into details, it is understood that the company's position is that based on potential production capacity, its current output is in line with the general situation in Venezuela, and that notwithstanding the fact that two of the major companies in Venezuela are producing quantities substantially under those of Lago, the larger output of the latter company is at a reasonable level, from the standpoint of potential output, and that a 9 per cent curtailment program, as suggested by the company's statement, is fair and equitable and in line with conservation plans as applied in the United States.

Although the Lago statement points out that two of the companies which it mentions have signified their unwillingness to participate in a curtailment program in Venezuela, inquiry at the offices of two of the companies named developed the fact that no communication on the subject had been received. It is presumed, therefore, that the statement relative to the unwillingness of other companies to take part in the curtailment plan was based on negotiations in previous instances.

Conservation Moves

Aside from the general agreement of principal companies to refrain from further additions to their lake tanker fleets, the history of the Venezuelan oil industry has shown numerous instances of inability of the leading interests to get together in a conservation move, although such an agreement, if once effected, could be easily carried through owing to the fact that there are only four major companies involved. Late in 1928 and early in 1929 there was some effort made to bring about a co-operative agreement to restrict production of crude in Venezuela, but nothing came of this move. At the time it was understood that Lago, which was building a 110,000-bbl. refinery at Aruba, was unwilling to curtail its operations until sufficient production had been built up in Venezuela to take care of the crude requirements of this plant.

Sir Henri Deterding, managing director of the Royal Dutch-Shell group, after calling for an agreement among Venezuelan operators at that time, announced that it had been found impossible to reach such an accord. Failing to secure the desired co-operation in curtailing activities in Venezuela, the Shell subsidiaries operating in that country have continued to expand their operations and production of the Shell group in Venezuela is now practically at a level with the aggregate output of all three of the principal American companies operating in that country.

Oil Tariff

Renewed agitation concerning the Venezuelan oil situation, which has led to a determined effort to have Congress reconsider its action on an import tariff on crude oil and refined petroleum products, has aroused widespread interest in eastern oil circles. While little has come to light regarding the matter, it is known that refineries in the Caribbean area have cut materially into American Gulf export sales of gasoline and other refined products, and it is expected that competition from the Caribbean refineries will become an increasingly important factor in the export market situation.

The three principal American companies active in Venezuela are in a peculiar position as regards the question of an import tariff on petroleum and its products. A duty on such imports, naturally, would adversely affect the South American operations of these companies, while at the same time benefiting their domestic operations, which are by far the most important from the standpoint of both volume and net earnings. Under these circumstances, these companies, naturally, have not been in position to take a definite stand, one way or the other, on the tariff question, although Standard Oil Co. (New Jersey), the parent company of Creole Petroleum, has pointed out that it considers such a tariff inadvisable and uneconomic.

New Jersey Curtailment

The New Jersey company announced last spring that it would curtail its imports of South American crude in proportion to its reduced takings of domestic crude production, and since that time the imports of Standard Oil Co. of New Jersey have run approximately 15 per cent under comparable 1929 totals.

Well posted observers in the eastern market are of the opinion that the imposition of any import duty on crude or refined products, or both, from South America, would inevitably lead up to further development of refining in the Venezuelan area. Such a development, they believe, would react to the disadvantage of the domestic producing and refining industry and in a short space of time more than offset any advantages which might accrue to the domestic industry by an import duty. American companies have substantial investments in oil production in Mexico, Venezuela, Colombia, Peru and other South American countries, and imposition of an import tariff on crude oil from these properties would undoubtedly force the construction of additional refineries in South America to refine this crude at points adjacent to the producing fields. While an import duty, if sufficiently high, would shut out imports of both crude oil and refined products to a large extent, the benefits of this tariff to the domestic industry would be short lived, it is believed, as development of additional refinery capacity in South America would inevitably cut further into export volume of American refined products, and sufficient quantities of gasoline and other refined products, which would otherwise go into export channels, would be thrown on the domestic market to more than offset the shutting off of imports of these products.

SUBMIT QUESTIONS FOR A.P.I. SURVEY

(Continued from Page 128)

mittee composed of representative producers and refiners 'to investigate the present and prospective economic situation of the industry with reference to consumption and production of gasoline and crude oil' and to report its findings during the annual meeting which convenes at Chicago on November 10.

"The committee has been appointed with J. Edgar Pew as chairman. The personnel of the main committee and its statistical subcommittee is appended.

"If this committee is to make a study and report of real value to the industry, it must necessarily have before it all the pertinent fact, data and opinion possible to obtain. The institute is attempting to assemble for the committee all the material it is possible to get in the brief time available.

"Since the committee proposes to cover both the present and the prospective economic situation, the period October 1, 1930-April 1, 1931, will be under review, and it can best serve if it has before it some authoritative estimates of working stocks of gasoline as of April 1, 1931, estimates of actual stocks of gasoline as of the same date and an estimate of the total amounts of crude oil refiners are planning to run over the six months' period. Such information is not now available, and it has been suggested that each refinery would undoubtedly be willing to furnish the institute, for consolidation purposes, its individual estimates.

"Believing the study the committee is conducting to be of vital importance to the welfare of the industry, I am, therefore, writing each refining company asking it to send the institute the answers to three questions, to wit:

"1. What is your present estimate of the minimum amount of working stocks of gasoline at refineries, at bulk terminals and in transit, by Bureau of Mines refining districts as of April 1, 1931, that your company will require to conveniently and economically carry on its gasoline business? (Refer to our letter of July 16, 1930, requesting the same information on working stocks required as of September 30, 1930.)

"2. What is your present estimate of the actual amount of gasoline your company will have in storage at refineries, at bulk terminals and in transit, as of April 1, 1931, by Bureau of Mines refining districts?

"3. What is your present estimate of the total amount of crude oil your company will require over the six months' period from October 1, 1930, to April 1, 1931? These requirements should be broken up and placed in Bureau of Mines refining districts in which your company plans to run that crude.

"Since the statistical committee must act immediately in the preparation of its material for the main committee which is to report early in November, it is requested that you telegraph or write me your reply in time for it to reach the institute's New York office not later than October 20. If for any reason you cannot answer the three questions at the same time, please let the answer to the first one available come as soon as ready and send the others later.

"Assurance is here definitely given that the usual sanctity of individual company figures will be maintained. The writer is officially and personally under definite pledge to every company reporting its figures that the same will not be disclosed to any competitor, and that such figures will be used only for consolidation into totals by districts or as a whole as the need for statistical information may require. In this instance the individual figures received will be consolidated by the institute into districts and only totals given to the committee or otherwise used."

The personnel of the special committee conducting the survey follows:

J. Edgar Pew, chairman, Sun Oil Co.; Howard Bennette, Western Petroleum Refiners Association; Paul N. Boggs, Union Oil Co.; W. N. Davis, Phillips Petroleum Co.; Wirt Franklin, Wirt Franklin Petroleum Co.; C. C. Herndon, Skelly Oil Co.; R. C. Holmes, The Texas Company; W. M. Irish, The Atlantic Refining Co.; E. W. Isom, Sinclair Refining Co.; George Legh-Jones, Shell Petroleum Corp.; E. T. Moore, Simms Oil Co.; Underwood Nazro, Gulf Production Co.; E. J. Sadler, Standard Oil Co. of New Jersey; E. G. Seubert, Standard Oil Co. (Indiana); B. H. Stephens, Magnolia Petroleum Co.

The members of the statistical subcommittee are as follows:

John D. Gill, chairman, The Atlantic Refining Co.; O. S. Ambrose, Tide Water Oil Co.; H. K. Davis, Western Petroleum Refiners Association; David Donoghue; Clarel B. Mapes, Mid-Continent Oil and Gas Association; E. P. Salisbury, Standard Oil Co. of New Jersey; Fred VanCovern, American Petroleum Institute; Earl Wagy, Standard Oil Co. (California).

GREASEWOOD DOME DISCOVERY IMPORTANT

(Continued from Page 31)

the Greasewood well, which was abandoned at 5,612 feet. It topped the Dakota at 5,208 feet and the Lakota at 5,550 feet.

In October, 1924, an advance summary of the work done by the United States Geological Survey gave a general description of the region. This report stated that new oil and gas fields might be discovered in northeastern Colorado far east of the proved fields of the Fort Collins-Wellington district. This summary, in part, was as follows:

"No anticlines comparable in steepness of flanks to those that contain oil and gas in the eastern part of Larimer County were found east of Larimer and Boulder Counties, but the exploration disclosed a broad, low anticlinal fold that extends southward from the eastern part of Weld County across Morgan County into the southwestern part of Washington County. The beds along this line are very gently flexed, the dip being much less than that in most of the producing fields of the Rocky Mountain region, though similar to that in the Mid-Continent oil fields of Oklahoma and Kansas. Whether or not folds so gentle favor the accumulation of oil in Colorado can be determined only by drilling several properly located test wells. The exact depth to the reservoir beds that are believed to lie beneath the surface in Morgan and adjacent counties cannot be foretold, but the federal geologists have concluded that at favorable localities the depths are not so great as to discourage drilling.

Underlain by Sedimentary Rocks

"Northeastern Colorado is underlain by sedimentary rocks of Cretaceous and Tertiary age. The Cretaceous beds, which consist largely of shale and sandstone but include some limy beds and coal, were deposited before the upheaval of the Rocky Mountains. Most of the lower beds of the Cretaceous were laid down on the floor of a vast shallow sea, which covered all this part of North America. Near the end of the Cretaceous period the sea dwindled in size and became shallow until it finally disappeared from Colorado, leaving only fresh or brackish water lagoons, lakes and marshes.

"In these bodies of water, and on the flood plains of rivers, where part of the vegetation was buried and changed to coal, the uppermost Cretaceous beds were formed. The lower beds of the Cretaceous are the source and the reservoirs of the oil and gas. The Teritary beds were deposited after the Rocky Mountains had been upheaved and consist chiefly of debris washed out by streams from the mountains and spread far over the lowlands. Today they cover the Cretaceous

rocks over large areas in Colorado and prevent the surface determination of the structure of the possible oil-bearing beds. Considerable areas, especially along South Platte River, are covered with sand dunes, river alluvium, and stream gravel, which were laid down still later, in Quarternary time, and these also obscure the geology of the underlying strata."

Geologic Formations

The succession of rocks in the region was shown in the following table:

		Feet	
Quaternary	Gravel, sand and alluvium	0–100	
Unconformity.			
Tertiary	Gravel, sand and clay	10–300	
Unconformity.			
Cretaceous:			
Laramie formation	Sandstone, shale and coal	200–800	
Fox Hills formation	Sandstone and shale	400–1,800	
Pierre shale:			
Dark shale with some beds of sandstone		1,500–6,000	4,500–10,000
Shale with many sandstone lenses		1,275±	
Richard sandstone member		0–70	
Sandy shale		100–200	
Larimer sandstone member		0–150	
Sandy shale		0–170	
Rocky Ridge sandstone member		0–165	
Sandy shale		300–600	
Terry sandstone member		0–20	
Sandy shale		200–400	
Hygiene sandstone member		0–100	
Dark shale and sandy shale		2,400–3,100	
Niobrara formation:			
Limestone and limy shale		330–410	
Benton shale:			590–640
Upper sandstone member (the so-called "Nio-Benton" of some geologists)		10–20	
Dark shale, limestone and bentonite		580–620	
Dakota formation:			
Upper sandstone member (Muddy sand of drillers)		30–80	
Dark shale		110–240	
Middle sandstone member		10–15	315–425
Sandy shale		25–65	
Lower sandstone member		35–75	

East of the Anticlines

After discussing the structures near the front range on the Fort Collins anticline, the report took up the structures away from the mountains as follows:

"East of the four anticlines named, wherever the conditions are known in Ranges 67, 66 and 65e north of the fortieth parallel, the Cretaceous beds dip toward the east without reversal. The inclination decreases more or less regularly until, in the eastern half of this strip, the beds are nearly horizontal. Nevertheless, the dip is sufficient to carry the Dakota formation far below sea level unless there is a much more abrupt thinning of the formations between the Dakota and the Fox Hills than the known facts would indicate. Because of this dip the beds that crop out near the producing wells north of Fort Collins lie 4,000 to 6,000 feet below the surface in the vicinity of Nunn, Eaton, Greeley and Hudson. The upper sand of the Dakota in the Fort Collins and Wellington Fields can scarcely be less than 8,000 feet below the surface in this part of Weld County.

"After making all possible allowance for the convergence of the Dakota and Laramie strata because of the eastward thinning of the intervening Pierre and Fox Hills formations, a geologist would not hold out much hope that the upper sand of the Dakota could be reached at any practicable drilling depth in northeastern Colorado unless the regional eastward inclination of the beds were reversed so that strata far below the Laramie again came to the surface. Fortunately, abundant evidence of such reversal has been found in the study of the areal distribution of the Cretaceous formations. Between Hardin and Masters Fox Hills beds appear at several places on the south side of South Platte River. About 3 miles east and southeast of Osgood the Fox Hills formation is exposed in a region that is nearly or quite surrounded by Laramie beds. All of Morgan County except the extreme northwest and southwest corners is occupied by Fox Hills and Pierre beds, which are covered at several places by Tertiary gravels, sand and clay.

Belt of Pierre Shale

"Extending southward from Fort Morgan at least as far as the southwest corner of Washington County there is a belt of Pierre shale, 5 to 15 miles wide, bordered on both sides by Fox Hills sandstone and shale; and north of Stoneham, in easternmost Weld County, and in adjacent parts of Logan County the two main heads of Pawnee Creek have cut their valleys through the cover of Tertiary sediments and have exposed Pierre shale, again nearly or quite surrounded by Fox Hills beds. East of Sterling the eastward-dipping Fox Hills beds disappear beneath Laramie strata that underlie the Platte River bottoms in the east half of Logan County, but south of Township 4n, Ranges 52, 53 and 54w, the edge of the Tertiary cover extends over the Fox Hills formation, so that the presence or absence of Laramie beds under the Tertiary beds in this vicinity can not be determined.

"In all this region in Morgan and adjacent counties the beds lie very nearly flat. Dips of one-half to three-fourths of a degree are the rule; a dip of 1½° or 2° is exceptional; at no place is the dip so much as 3°. The exposures are in general far apart, and the individual outcrops are small. Under such conditions the true bedding and dip of the strata are difficult to determine with certainty; the slight dips observed at the surface may not represent truly the dip a few thousand feet down. Such a formation as the Pierre shale must have been compacted differently in different areas under its varying overburden of sediments, and the structure of its uppermost beds or of the overlying Fox Hills beds, in which the dips are so gentle, is probably quite different in detail from that of the underlying Niobrara, Benton and Dakota beds.

Areal Distribution Best Clue

"The best clue to the presence of anticlinal folds in the Dakota formation beneath northeastern Colorado is therefore the areal distribution of the overlying Pierre, Fox Hills and Laramie beds. Outcrops of Pierre shale east of the Greeley syncline can occur only at places where upward flexures of the beds have lifted them a thousand feet or so above their altitudes beneath Greeley. The summits or higher flanks of such regional anticlines are the only places where prospecting for oil is justified by the known geology of this part of the State.

"The localities where anticlinal folds may be inferred from the areal geology are indicated on the accompanying map. The most notable of these folds is the Fort Morgan anticline, which apparently extends in general southward from the SW of Township 5n, Range 57w, across Township 4n, 57w, and the E half of Township 3n, Range 57w, and continues southward close to the boundary between Ranges 56 and 57w at least as far as Township 2s, and probably several miles farther. Next in importance is the Pawnee Creek anticline, which brings the Pierre to the surface in Townships 8 and 9n, Range 56w, in the SW of Township 9n, Range 57w, and the NW of Township 8n, Range 57w. A third flexure, the Greasewood Lakes anticline, curves southeastward from the SW of Township 7n, Range 61w, into the SW of Township 6n, Range 60w, and beyond that is lost among the sand hills north of Goodrich.

Areas Worth Prospecting

"Apparently none of these three anticlines is comparable in sharpness of folding to those near the mountain front from which oil and gas are now being produced; they are very much broader folds with much lower dips. In fact, very few of the known oil-bearing anticlines in the Rocky Mountain Field are as gently arched as these, the sides of which dip only a degree or two. It might be logical, therefore, to doubt whether these low anticlines could cause oil to accumulate in large pools along their crests. But it is in just such anticlines as these that the oil pools of the Mid-Continent Field are found, and it is therefore believed that they should not be passed by without thorough tests.

"The geologist may confidently predict that sandy beds well fitted to serve as reservoirs for oil and gas lie beneath the surface in northeastern Colorado, but, unfortunately, he can not yet state precisely the depth to such sands in any specified locality. As yet only one sand, the upper sand of the Dakota formation, is abundantly productive in the adjacent oil and gas fields near Fort Collins. Nevertheless the possibility of obtaining oil from other sandy beds should not be overlooked. Probably the Hygiene and other sandstone members of the Pirre formation become thinner and finally disappear at greater or less distances east of their outcrops near the mountains. None of these beds have been recognized in the areas of Pierre outcrop, either in the vicinity of Morgan County or close to the eastern boundary of Colorado. About 10 miles due south of Fort Morgan a sandy zone has been encountered in water wells at depths of 500 to 600 feet, but the sandstone there is probably not the eastward extension of any one of the sandstone members near Fort Collins.

"In view of the occurrence of oil near Boulder and Florence, it seems possible that oil may be found in commercial quantities in one or more of these sandstone lenses in the Pierre. If so, the pools would be found near the upper edges of the lenses, where the porous sandstone pinches out. Probably there are sandstone lenses which thus pinch out on the west flank of the Fort Morgan anticline and which lie at depths of 500 to 5,000 feet, but the surface geology gives no clue to their location. Drilling for them would be the wildest of wildcat ventures.

Best Chance for Oil

"The upper sand or some other of the closely associated sandstones of the Dakota formation offers by far the best chance for oil in northeastern Colorado. The depth of this upper sand of the Dakota depends upon the amount and place of the thinning of the Pierre and Fox Hills formations. Only in the Denver Basin do these formations display the great combined thickness of 7,000 to 10,000 feet. Elsewhere, as in Kansas and the Black Hills region, their total thickness is only 2,000 to 4,000 feet. In the northwest corner of Morgan County the Fox Hills formation is only about 400 feet thick, whereas 50 miles to the west, near the Larimer-Weld County line, its total thickness is 1,800 feet. Presumably the Pierre thins eastward somewhat less abruptly, but its thickness in northeastern Colorado can not be determined, because, unfortunately, those wells in this area that start in recognizable beds near the top of the Pierre have not penetrated the Dakota, and those near Wray that have reached the Dakota start at an unknown position in the Pierre. The Padroni well, north of Sterling, which starts approximately at the base of the Laramie, may have reached the Carlile or top member of the Benton at a depth of 4,484 feet, but the record of this well is indefinite and unreliable. The best that the geologist can do now is to state that the upper sand of the Dakota formation may be reached at depths between 4,000 and 6,000 feet below the surface along the crest of the Fort Morgan anticline near the southern boundary of Morgan County.

"With this information at hand the value of the various parts of northeastern Colorado for prospecting have been indicated on the accompanying map. The most favorable areas are shown by crossed lines. Those areas in which the Dakota probably lies at depths of less than 7,000 feet beneath the surface are shown by a single line pattern; within these areas only the higher parts of the anticlines should be tested. In the unshaded areas and especially in the Greeley syncline the known geologic conditions are unfavorable for the production of oil or gas and drilling is not justified."

POSSIBLE CRUDE CUT ALREADY DISCOUNTED

(Continued from Page 28)

line settled to 5¼ cents by the close of the week and the market was admittedly weak. Further reductions seemed likely due to the unfavorable showing of the refinery gasoline market. The demand for natural gasoline was slightly below normal with no new purchases recorded by Gulf Coast refiners.

Fuel Oils

There was practically no change in fuel oil quotations. Low gravity fuel continues to be offered in large quantities with industrial buyers and the railroads taking out minimum quantities on their contracts. Colder weather is sure to increase the demand but this is not expected to offer sufficient support to permit higher prices.

Low cold test and high gravity fuel oils are being traded in increasing volumes but the heaviness of the whole fuel market holds the price on these grades to a constant level.

Gas oil prices remain unchanged, the principal demand now being for the light grades having a pour point below 10° F. Distillates lighter in gravity than ordinary gas oil and having a flash below 170° F. are also finding a better movement as the winter season is approached but prices have not been changed.

Neutrals and Wax

All grades of neutrals and cylinder stocks, including bright stocks, were quoted at prices below those of a week ago. The Mid-Continent Petroleum Corp. posted a lower schedule of prices at the beginning of the week and other refiners immediately adopted similar schedules. Steam refined cylinder stock was especially heavy. Several new Oklahoma City refineries are making steam refined stock from the Oklahoma City crude and are offering this at prices as low as 4 cents. While cylinder stock is considered a specialty and its market has been developed by relatively few refiners who have found it necessary to study this field for years, the posting of these low prices has undoubtedly had a demoralizing effect. Wax was also offered freely and at prices slightly below those of a week ago.

GEOLOGIC REPORT ON MONTANA

The geology of an area of over 1,000 square miles in South Central Montana, including parts of Carbon, Big Horn, Yellowstone, and Stillwater Counties, is discussed in a report by R. S. Knappen and G. F. Moulton just issued by the Department of the Interior. From their geologic features several parts of the region have appeared to be favorable for the accumulation of oil and gas, and many wells have been drilled. Although none of these wells obtained oil or gas in commercial quantities, showings of both oil and gas are reported from several of them. The report discusses the drilling already done and points out the fact that some of the wells were not carried deep enough to condemn definitely all the reservoir beds in the areas tested. Some additional domes and anticlines are recommended for drilling at a future time when conditions warrant the cost of exploration.

DALE BUYS A BARGAIN

PAMPA, Tex., Oct. 18.—The Dale Refining Co. of Electra, Tex., purchased 30,000 bbls. of Gray County crude oil from the Ticonian Oil Co. at 87½ cents per barrel delivered at the Dale refinery at Electra. As the pipe line charge is 27½ cents per barrel, the price paid at the well was only 60 cents per barrel, or about 42 cents under the new Humble price schedule effective on Thursday, October 16.

FRENCH GET VENEZUELA WELL

The Societe Francaise de Recherches au Venezuela is reported to have struck oil at 6,273 feet in the Cacuz well No. 3 on the Urdaneta concession. The well produced approximately 476 bbls. a day and, according to the Revue Petrolifere, is being watched with great interest in France.

VAN POOL CELEBRATES BIRTHDAY; HAS PRODUCED 6,000,000 BARRELS

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 18.—Van Field, Van Zandt County, East Central Texas, celebrated its first birthday on October 14, commemorating the discovery of a new Woodbine sand field by the Pure Oil Co. in the southeast corner of the W. T. Jarman 142-acre tract in the Nacogdoches County School Lands Survey, near the town of Van.

Since the completion of the discovery well 137 producers have been completed, total potential of these running close to 800,000 bbls. per day. They are given an allowance by the State Railroad Commission of 27,500 bbls. per day, this quantity being run by the Pure Oil Co.'s 10-inch line from the pool to Smiths Bluff on the Gulf Coast.

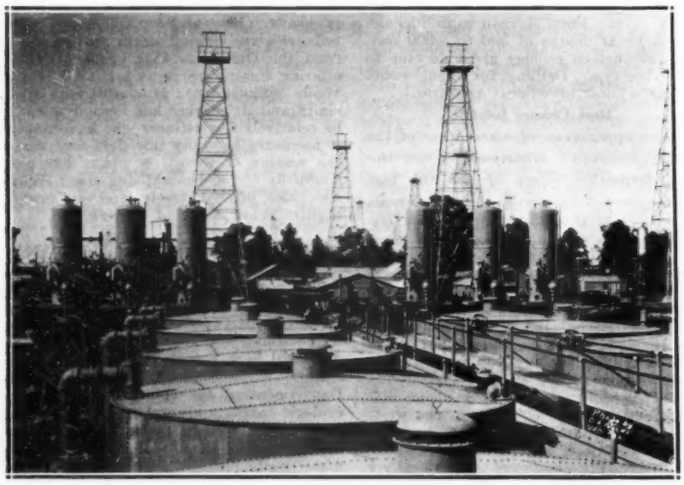
There are five pumpers in the field, out of the 137 producing wells which have produced around 6,000,000 bbls. within the year's time. Proration gauges as of October 15 show the wells producing at the rate of 269,677 bbls. daily through eleven-sixteenth inch choke. These gauges are taken twice a month, on the first and fifteenth to determine the daily potential of the field. The wells are allowed to flow for three hours each, but only the last two hours' gauges are used in computing the dialy potential.

The Van Pool proper, or the 5,800 acres held under the unit plan by six major companies, has only been defined in one direction so far, although producing acreage on the structure has been hemmed in by abandoned tests on the north, northeast and eastern side of the field. The one dry hole on the west limiting production of the unit in that direction was drilled by the Pure Oil Co. in the southeast corner of the A. Crim 48.5-acre farm in the Nacogdoches County School Lands Survey.

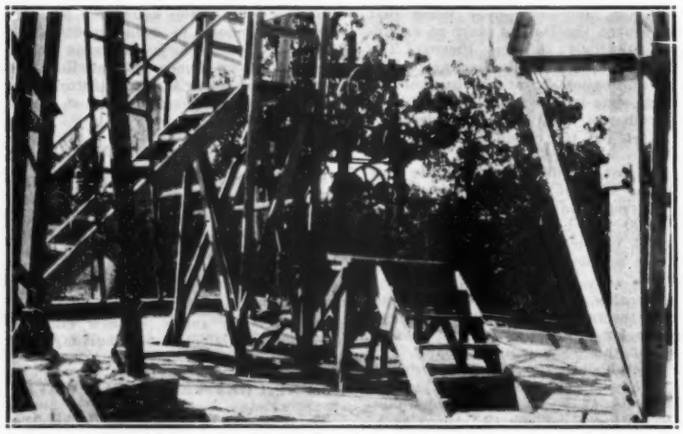
The Carroll district, the producing area outside of the unit plan, opened up by the Humble Oil & Refining Co. in its extension well on the Mrs. E. E. Carroll farm in the William Daniel Survey will probably be the area from which the Humble Pipe Line Co. will draw production when its new line is completed in about two months, for the pumping station and tank farm of the Pure Oil Co. is located about 3 miles west of production in the pool, and gathering lines can be constructed more cheaply by this company on the unit plan acreage, leaving the east side or Carroll district to the new transporter's gathering system, although Pure already has a gathering line in the extended area.

TO SEND TELEGRAMS

NEW YORK, Oct. 20. — The Texas Company has concluded an agreement with the Western Union Telegraph Co. whereby telegrams will be accepted for transmission from Texaco service stations in all of the 48 states.



Picture of rigs, flow tanks and separators in the heart of the Van Field. Gathering lines to these flow tanks serve the various producing wells in the field, carrying their daily allotment under the proration plan which gives the field an allowance of 27,500 bbls. daily.



Humble Oil & Refining Co.'s No. 1 Carroll, in the southeast corner of the Mrs. E. E. Carroll tract, the well which extended the Van Field over 2 miles to the northeast and opened up the area which is now called the Carroll district, Van Zandt County. Note ship-shape condition of well, with concrete floor, neatly constructed steps to connections, and to the left the separator. Pumping equipment is housed in a sheet iron house just to the left of the picture. Humble Pipe Line Co.'s new carrier from the Van Field will probably draw the majority of its oil from the Carroll district which was opened by this well.

September Proration Schedule Is Extended As Hearing Drags On

OKLAHOMA CITY, Okla., Oct. 22.—With the September proration schedule in Oklahoma extended to an indefinite date, the Oklahoma Corporation Commission continues to listen to testimony and arguments pro and con in the matter of the proposed change in the proration program in the State to cover the last three months of the year. The hearings have been dragging on day by day since October 10, with protestants from Stephens County as the most important element against the adoption of the entire schedule. Stephens County producers and refiners are not against proration in other counties, but they object to its application in their own county.

Attorneys for the Champlin Refining Co. and the Julian Oil & Royalties Co. are combing every witness, it is supposed, for the purpose of building up testimony for future use in suits they expect to bring to break down the authority of the Corporation Commission as it applies to their respective unrestricted control over their own production, and hours are used up daily in long and minute cross examinations of every witness that favors proration. Counsel for these and other companies and individuals protesting against proration also have their own witnesses who, after giving their reasons for objecting to the curtailment of production in the State, are in turn subjected to thorough cross examination by Judge Burford, representing the petitioner, Wirt Franklin. It is expected that the whole week will be taken up in these long-drawn-out examinations of witnesses, which will include rebuttal testimony for the petitioner.

In the past week little if any testimony was brought out that had not already had its counterpart in the earlier days of the hearing. Engineers, oil refiners, producers, statisticians and executives of oil companies have followed one another on the stand given their direct testimony and then submitted to cross examination while the three corporation commissioners patiently listened to it all and now and then took part in questioning witnesses in order to clear up points of evidence.

Attorneys questioning Dr. W. P. Hasseman, research and development engineer, sought to prove that curtailment of crude oil was a measure of price fixing rather than conservation. Doctor Hasseman admitted that prices would be lower if proration was taken off.

Doctor Hasseman was testifying for the C. C. Julian Oil & Royalties Co. and the Champlin Refining Co. in their attempt to defeat proration.

Pinching in of wells not only would be better method of proration, but would ultimately recover more oil for the operators than the open flow, the witness said.

"Wide open flow would be the worst possible method of production," he testified on cross examination.

If intermittent flow methods are to be used, they should be so timed that the oil may be shut in when it has reached the peak of production and the gas flow begins to increase, Doctor Hasseman continued.

Doctor Hasseman, answering question by Commissioner Capshaw, said that to open the field wide would result in production of more oil than could be handled and would permit unequitable taking of oil from various leases. The present method of "ratable taking" is "fair," he said.

Clarel B. Mapes, petroleum economist for the Mid-Continent Oil and Gas Association, was on the stand Monday with a mass of facts and figures on production imports and exports. Mr. Mapes showed that petroleum exports exceeded petroleum imports, but that imports of crude and refined products for the first eight months of this year exceeded the total of the same period last year.

Jake L. Hamon, Jr., of Ardmore, Okla., made a statement that Carter County oil operators favored proration and were willing to submit to partial proration of their wells in order to relieve the situation in Oklahoma City. The statement was dictated into the record. B. M. Parmenter, counsel for some of the protesting companies, called Hamon to the stand in an effort to show that the proration of a portion of the southern Oklahoma production would result in the closing of some refineries in that section of the State.

Representatives of railroads testified that they had been soliciting oil transportation business and had lowered their rates as an inducement to make tank car movements of crude oil and had promised fast service to refineries. Cross examination brought out the fact that the railroads did not own the tank cars and that they were furnished by tank car companies.

Charles Jacobson, superintendent of production for the Barnsdall Oil Co., a rebuttal witness, today testified that shutting in or pinching in oil wells will not damage them, and gave instances where shutting in wells had benefited them. Testifying in regard to the proration of production in wells making in excess of 5 bbls. a day, as proposed in the old heretofore prorated fields in the State, Jacobson said the maximum might well be 5 bbls. daily although determination depends upon local conditions in the field. J. R. McWilliams of the Skelly Oil Co., testified today that Doctor Hasseman's statement that the Oklahoma City Field had a definite potential was, in his opinion, not absolutely accurate. McWilliams said he did not believe anyone could definitely determine the ultimate production with certainty.

H. J. PACKARD DIES

H. J. Packard, assistant chief geologist of the Continental Oil Co., with headquarters in Denver, Colo., died Saturday, October 18. His death was due to complications which developed following an operation for appendicitis the week previous.

Located in Denver for several years, Mr. Packard was dean of the active geologists in the Rocky Mountains and was also widely known in the West Coast and Mid-Continent fields where he had done considerable work. He was born at Palmyra, N. Y., in 1883. He graduated from Stanford University in 1907 specializing in geology. In 1912 he went to Venezuela for what is now the Shell Oil Co. of California.

In 1915 he returned to San Francisco where he located 86 miles of tunnel for that city. From 1917 to 1920 he engaged in consulting work, joining the Midwest Refining Co. as geologist in the latter year. In 1923 he became chief geologist for the Mutual Oil Co. and continued in that capacity when the Mutual was merged with the Continental Oil Co. He was made assistant chief geologist of the Continental in charge of the Rocky Mountain area when the Continental was reorganized following the merger with the Marland Oil Co. Making a special study of the Rocky Mountain area, Mr. Packard had an important part in the discovery of several oil pools.

Mr. Packard is survived by his widow and two daughters. Funeral services were held in Denver.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 131)

Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

Column 5—Price change posted by Standard of California September 16.

Column 6—Oil below 14 gravity posted at 45 cents.

Column 8—Posted by General Petroleum Co.

Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.

RAILROADS TO REDUCE RATES ON GASOLINE

(Continued from Page 29)

vestigating the possibilities of water transportation in connection with the operation of its gasoline line now being laid from Borger, Tex., to Kansas City and St. Louis. The new Great Lakes gasoline pipe line, extending from various refining points in Oklahoma and Kansas to Des Moines, Iowa, Minneapolis, Minn.; Chicago, etc., will also offer numerous possibilities for the linking of pipe line and water transportation. The next step in this matter will be the intimate distribution of these products from these established depots by means of trucks operating within a radius of 50 to 150 miles.

Railroads Have Their Place

Despite what may appear to be unfavorable developments for the railroads they serve a definite purpose and are better suited for certain duties. Transporting gasoline through a pipe line requires that relatively large quantities be transported of any one grade in order to keep from mixing or changing the quality of the material. A trainload of gasoline may be made up of cars, each one of which carrying a different grade of gasoline. Any one of these cars may be sidetracked at any point along the line.

In and 8-inch line 800 miles long, such as is being built now, there is approximately 250,000,000 bbls. of gasoline in that line at all times. The disadvantage of this factor may be readily seen. On the other hand, it is generally conceded that pipe lines operating at capacity are able to transport gasoline and crude over long distances at a lesser cost than the railroads, and if the problem resolves it self into a matter of operating expense the pipe lines appear to hold a decided advantage.

Attempting to compete and reduce railroad rates and pipe line rates to a point where neither is profitable would be a shortsighted step in the case of both parties. Since there is such a wide difference in the service these two means of transportation offer it seems more logical that rates be established which will yield a reasonable profit and rates which will be commensurate with services rendered.

ANTITRUST LAWS TO BE DONOVAN ADDRESS

(Continued from Page 40)

men who received all three decorations in the World War. He was decorated also by the French and Italian governments.

Tank Committee Session

Members of the Division of Production Tank Committee have been notified by Chairman G. O. Wilson, Standard Oil Co. of California, San Francisco, Calif., that the committee will meet in Room 422-A, Stevens Hotel, at 9 a.m., Monday, November 10, one day in advance of the official opening of the American Petroleum Institute's annual meeting.

Prominent on the program is consideration of proposed changes in specifications for both bolted and riveted tanks. These changes were discussed at a meeting of the Engineering Subcommittee and Bolted Tank Subcommittee at Los Angeles, Calif., September 30 and were unanimously recommended for adoption.

In the case of riveted tanks it is proposed to alter the specifications so as to overcome difficulties experienced from shrinkage stresses. In the case of bolted tanks it is proposed to make the specifications more explicit in order to assure interchangeability of staves made by different manufacturers.

Members who cannot attend the meeting have been asked to mail comments to Carl A. Young, Secretary, Division of Production, American Petroleum Institute, Dallas, Tex., before November 1.

Rotary Drilling Equipment

Restatement of A.P.I. Standards stipulations concerning rotary taper joint gauge tolerances to give definite rather than general tolerances for present gauge sizes will be considered by the Division of Production Rotary Drilling Equipment Committee at a meeting at Chicago, Monday, November 10. Chairman E. J. Nicklos, Continental Oil Co., Ponca City, Okla., has notified members the session will be held in Room 445-A Stevens Hotel, at 9 a.m.

Chairman H. W. Fletcher, Hughes Tool Co., Houston, Tex., has called a preliminary meeting of the Rotary Subcommittee on Gauges for Sunday, November 9, at 10 a.m., in the same room, for the purpose of conducting an interchange test on rotary tool joints.

A meeting of the Manufacturers and Engineers Subcommittee, of which E. E. Greve, Oil Well Supply Co., Oil City, Pa., is chairman, will be held in Room 452-A at 2 p.m., Sunday, November 9, to discuss various items which have been referred to the group.

Cable Tool Committee

Consideration will be given specifications for cable tool gauges and joints proposed by the British Engineering Standards Association at the meeting of the Division of Production Cable Tool Committee to be held in connection with the annual meeting of the American Petroleum Institute.

Chairman E. H. Williams, National Supply Co., Toledo, Ohio, has asked members of the committee to comment on the British specifications, which differ from the A.P.I. specifications only in detail, in the hope of eliminating the major differences and insuring continued interchangeability. At the present time the cable tool gauges and joints made in accordance with A.P.I. specifications are recognized throughout the world.

The committee, which will meet at 9 a.m., Monday, November 10, in Room 452-A of the Stevens Hotel, will discuss also the clarification of A.P.I. cable tool gauge specifications, checking licensees' reference master gauges, standardization of temper screw tees, and a proposed A. P.I. poster on cable tools.

Late Fields

(Continued from Page 40)

underlies a ledge of salt, which in this well was passed through at 2,115-2,664 feet.

Gulf Production Co. extended the production at Moss Bluff, southern Liberty County, with the completion of its No. 2-A McFaddin, flowing at the rate of 700 bbls. from sand at 5,813-29 feet. The well, the third at Moss Bluff, has been shut in for storage. It is approximately 400 feet north and 100 feet west of the same company's No. 1 McFaddin, which was a north offset to Humble's discovery well. The wells are on the east flank and all have been shut in since completion except for a small amount of oil the Gulf company is selling Pure Oil Co. for fuel at the latter's wildcat, No. 2 Herff, now drilling on the south side of the dome.

OKLAHOMA

The actual gauges from the Oklahoma City Field for the last seven days showing the date, number of wells, daily average production, and the total number of wells completed each day, were as follows:

Date—	Bbls.	Wells prod.	Wells comp.
October 15	109,500	62	605
October 16	84,869	63	607
October 17	90,392	61	608
October 18	83,547	57	611
October 19	112,812	54	612
October 20	86,153	59	612
October 21	81,514	55	613

British-American Oil Co.'s No. 1 Eckroat, SE cor. NW, Section 10-11-3w, on the west side of Oklahoma City Pool, is estimated to be a 72,000-bbl. well. The sand was found from 6,331-6,532 feet, and it flowed 5,253 bbls. the first hour and three-quarters, with the gas estimated at 45,000,000 feet a day.

Mid-Kansas Oil & Gas Co.'s No. 1 Ball, NW cor. NE, Section 19-12-1w, the east offset to the discovery well in the Nicoma Park district, was landing the 9-inch casing at 5,700 feet.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW, Section 17-13-3w, a wildcat test north of the Oklahoma City Pool, which found a showing of oil and gas in the Wilcox sand and drilled into water, has been plugged back to several different horizons and tested getting no showings, is preparing to pull the 9-inch casing and it may be abandoned.

Eason Oil Co.'s No. 1, NE cor. SW SW, Section 6-9-11, Hughes County wildcat, had a showing of oil at 3,991 feet and water 4,001-05 feet. The test was drilling deeper at 4,018 feet on the last report of October 21.

The Eason Oil Co.'s No. 1 Katsoher, SW cor. NE SW, Section 34-17-4w, Logan County wildcat, flowed 557 bbls. October 19 and 590 bbls. and 485 bbls. on the following two days. The owners plan to drill the test deeper later in the week.

Deep Rock Oil & Refining Co.'s No. 1 Whitworth, NW cor. SW NE, Section 30-8-8, in Seminole County, south of Wewoka, flowed 2,255 bbls. on the gauge of October 21. Four new tests have been located near the well in the last few days.

Wrightsmith and others' No. 2 Smith, SE cor. NW SW, Section 2-11-3w, Oklahoma City Pool, flowed 267 bbls. in 13½ hours from sand at 6,205-6,495 feet. The gas volume was estimated at 25,000,000 feet a day.

KANSAS

Syndicate Oil & Gas Co.'s No. 1 Peirino, in Section 4-16-11w, is drilling at 1,850 feet, and offsetting the discovery well in the Davidson Pool, in Barton County. Prairie Oil & Gas Co.'s No. 1 Davidson, in Section 4-16-11w, the discovery well, made 200 bbls. on the last day's production gauge made several months ago and has been shut in since.

Central Commercial Co.'s No. 1 King, in Section 20-13-21w, Ellis County, has resumed pumping and is producing at the rate of 18 bbls. a day. It is the only producing well in the county.

Producers & Refiners Corp.'s No. 2 Thompson, SW cor. SE NW, Section 21-20-10w, in the Schurr Pool, Rice County, is expected to reach the sand at 3,300 feet, in a few days.

Mid-Kansas Oil & Gas Co.'s No. 1 Garret, in Section 30-19-1w, northeast of the Ritz Pool, in McPherson County, has a showing of oil in the chat at 3,013-19 feet and is landing the 6-inch casing. The showing is believed to be enough to make a commercial well. It is a semiwildcat test.

In the western part of McPherson County, E. W. McPherson and others' No. 1 Farris, C SE NE, Section 15-20-5w, is a location. It will be drilled to test the shallow gas sand. The same operators drilled another gas well in the vicinity and found 1,000,000 feet a day of gas at 1,020-41 feet.

The only operation in the Voshell Pool, in McPherson County, is the United Petroleum Corp.'s No. 1 Stuckey, NW cor. SW SE, Section 9-21-3w. It is located on a 10-acre lease farmed out by the Shell Petroleum Corp.

South of the Voshell Pool, the Alco Royalty Co.'s No. 1 Zerger, NW cor. NE SE, Section 16-21-3w, is a location. The acreage was farmed out by the Amerada Petroleum Corp. and Shell Petroleum Corp.

Magnolia Petroleum Co.'s No. 1 Davis, SW cor. NE NW, Section 18-21-2, Marion County wildcat, had water in the Wilcox sand at 3,370-95 feet. It was drilled deeper to 3,435-43 feet, where it will be abandoned.

Derby Oil Co.'s No. 3, in the SW cor. NE NW, Section 19-27-2, Sedgwick County, in the Eastborough Pool, swabbed 1,025 bbls. the first 24 hours. The oil was found in chat at 2,976-81 feet.

Vickers Petroleum Co.'s No. 4 Keys, NW cor. SW NE, Section 30-27-2, in the Eastborough Pool, in Sedgwick County, has a hole full of oil from the Viola lime at 3,151-56 feet. The 6-inch casing is landed at 3,151 feet. It is a new pay horizon for the area. Other wells in the pool are producing from the chat and Simpson horizons.

GULF COAST REFINERY MARKET IS STILL WEAK

HOUSTON, Tex., Oct. 21.—Gulf Coast refinery markets continued weak the past week, although there were no important price changes except in Diesel bunkers, in which the posted quotation was cut from $1.80 to $1.70. The latter market, however, is limited to an occasional ship and the product is not of consequence as far as the general situation is concerned.

Motor fuel continued to move on contract on a basis of 6½ cents, coastal refineries. Spot sales were inactive but for the most part were held at a minimum of 6¾ cents. Sellers generally were inclined to hold material not forced to move on contracts, which are based largely on North Texas quotations.

Fuel oils reflected no additional slipping of prices although the market continued weak. On the other hand sellers gave no indication of trying to push sales and the situation was looked upon as marking time.

Also anticipating possible better prices for gas oil as the season for burner oil gets under way, coastal refiners are holding back. Numerous inquiries are being received for coastal gas oil, a specially desirable product because of its low zero test, but several refiners have stated they positively will not sell under their idea of the market. Buyers have offered from 3½ to 3⅝ cents but 3¾ cents is considered the absolute minimum notwithstanding the fact that some material is accumulating in storage.

Reductions recently in pale and red oils have failed to stimulate demand except on some of lighter viscosities and for the most part the situation is inactive at last week's new prices.

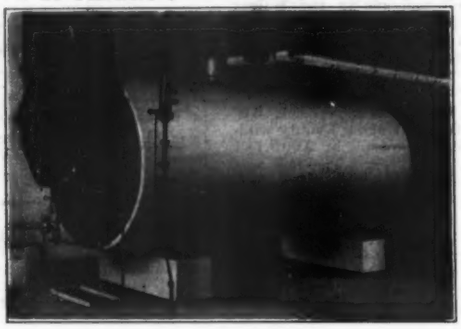
FIRST STATION ON AJAX LINE TO START OCT. 23

The Ajax Pipe Line Co. announces that it has completed its new twin 10-inch pipe line as far as Afton, Mo. The first engine will be started at its station near Pryor, Okla., Thursday, October 23. The twin 10-inch line has been tested as far as Pryor from the starting point at the Glenn Pool in Oklahoma. The stations on the new line are being spaced approximately 40 miles apart. The completion of the twin 10-inch line is expected January 1, 1931.

CALIFORNIA PRICES UNCHANGED

LOS ANGELES, Calif., Oct. 20.—There was no particular change in the refined oil market on the Pacific Coast during the past week, conditions remaining in status quo. If the present situation continues during the winter months, marketers and refiners will be able to start off the new year in better shape. Producers have not yet succeeded in reducing state production to the maximum allowable of 550,000 bbls. per day and from present indications will probably not reach this objective as current production is approximately 45,000 bbls. per day in excess of the established allowable. The tentative agreement reached by Kettleman Hills operators to bring that field under a unit plan of development is a very progressive move and when this plan is put into operation it should be reflected in both the crude and refined oil market.

Royalty oil from Kettleman Hills has been quite an important factor up through the San Joaquin Valley and in the San Francisco Bay region during the past few months. When the unit plan becomes operative, field production will probably be curtailed and this reduction at Kettleman Hills will be reflected in a smaller amount of royalty oil available and thus reduce the amount which is at present finding its way into the cut rate market. Crude oil and natural gasoline from the Playa Del Rey Field of Los Angeles Basin has been an important factor in preventing the establishment of standardized quotations in southern California. Peak production is expected to be reached in this field within the next five or six weeks, after which the effect of this field on the refined oil market should diminish.



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EXCESSIVE TAXES BIG HANDICAP TO DEVELOPMENT OF MOTOR TRUCK

By M. L. Pulcher
President, Federal Motor Truck Co.

The current uptrend of truck taxation is a subject meriting the serious consideration not only of those actively engaged in the commercial vehicle industry, but equally of the vast public whom highway transport serves.

The benefits of commercial haulage are far-reaching. They touch everyone. By means of the motor truck, merchandise moves in a direct line from manufacturer to user. Farm produce is transported with speed and dispatch to the city. In that exchange of world commodities so necessary to human existence, the motor truck saves untold millions of dollars in time, labor and actual hauling cost. Facilitating distribution and maintaining low living costs, it performs a service of incalculable value to industry in all forms and to the ultimate consumer. Without the motor truck, living costs today would be prohibitive—living conditions intolerable. Taxes that impede distribution undermine the very foundation of progress and prosperity.

No objection has ever been voiced to the motor truck paying its just share of taxes, but can any thinking person conscientiously claim there is any justice whatever in forcing trucks, which represent 12 per cent of the nation's motor vehicles, to pay 28 per cent of all vehicle taxes? Or is there any semblance of fairness in asking motor trucks to pay 100 per cent more gasoline tax than the passenger car? Such ratios of taxation would be absurd even for a luxury. But bear in mind that this excessive taxation is directed against what is recognized as an economic necessity—a factor of tremendous importance in modern distribution.

Over the "Road" or "Hill"

It is a matter of grave concern whether taxes will lead trucks "over the road" to an enlarged field of service or "over the hill" to the industrial poorhouse.

Certain it is that if the present practice of increasing the truck tax burden is permitted to go unchecked, the time is not far distant when highway carriers will be compelled to yield their position in the nation's extensive transportation system.

Of recent years citizens of certain southern states have sought through extensive national advertising to invite industrial capital to develop the natural resources of their states.

How successful they have been is not known. However, if truck registration may be accepted as the "yardstick" of industrial and commercial activity, the results have not been favorable.

In those states, taxes exceeding $1,100 are assessed against the owners of common carrier trucks of only three-ton capacity.

The fact remains that one of those states, with 52,000 trucks, ranks thirty-eighth among all the states in per capita ownership, while another with 25,000 trucks is rated forty-sixth in per capita truck ownership.

In half a dozen states the tax on larger trucks is over $1,000 each and in about 15 states it ranges from $500 to $1,000. In many cases these fees apply to heavy trucks of such average size as three tons. Since the average automobile tax is under $25 for registration fees and gas tax, it is hard to construe by any theory that there is justice in taxing any truck over $500 no matter what its size.

Manufacturer's View

The shrewd manufacturer seeking a site for a new factory invariably considers facilities for the distribution of his products. He knows well that no single community can consume all his merchandise—that he must expand over a very large area, and he knows that the motor truck is a necessary link in his distribution system. Is it then to be expected that he can be persuaded to invest his money where distribution will be handicapped? Can he afford to jeopardize his success by locating in a state where taxes on commercial haulage would seriously interfere with the development of his enterprises? To do so would be business suicide.

It is significant that those states enjoying the greatest industrial prosperity fall in the classification of low truck tax states. Perhaps this fact explains why nearly 40 per cent of the truck ownership of the country is concentrated in these states.

There the lesson of developing and maintaining facilities for economic and flexible transportation has borne fruit in industrial leadership. Therein is a lesson from which other states aspiring to greater development of industries might profit.

If ever there was a time for effective organization work, it is the present. The tide of taxation can be turned by forceful, well-directed opposition, but there is no time to lose, for right now much legislation against motor trucks is in the making—more unjust and discriminatory laws. The time to strike is now. Paraphrasing that memorable declaration of Revolutionary days: "We in the motor truck and transportation business must either hang together or hang separately."

CALIFORNIA ACCOUNTANTS

LOS ANGELES, Calif., Oct. 20.—Harry W. Moore, former chief auditor of the State Corporation Department, and a member of the firm of Thomas & Moore, public accountants, will be the chief speaker at the regular monthly dinner meeting of the Petroleum Accountants Society, to be held Thursday, October 23, in the Commercial Club of Southern California, 1106 South Broadway. His subject will be "The Public Accountant and Industry."

J. S. Wallace, vice president of the Richfield Oil Co., and a member of the Petroleum Accountants Society, will present a paper on "Distribution of Automotive Costs."

H. P. Brown, controller of the Rio Grande Oil Co., and a member of the society, will talk on "Organization of an Accounting Department." There will be a discussion of these topics by the members of the society.

As is the usual custom at these meetings, question-box items will be presented relating to petroleum accounting, and these will be discussed and answered.

NEW YORK OIL MEN ELECT

BOLIVAR, N. Y., Oct. 18.—At a meeting of the executive committee of the New York State Oil Producers Association held here, the following officers were elected to serve for the ensuing year:

Lewis H. Thornton, Wellsville, honorary president; Harry E. Goodrich, Richburg, president; Arthur W. Shaner, Bolivar, Harry Bradley, Wellsville, and Stephen C. Pohe, Olean, vice presidents; Neil S. Sullivan, Bolivar, secretary and treasurer. A new office was also created, that of vice chairman of the board of directors and executive committee, to which F. E. Richart, of Wellsville, was elected.

At another meeting the board of directors of the conservation committee discussed the question of paying 3 cents per barrel for advertising 100 per cent pure Pennsylvania crude oil and one-half cent a barrel per annum to defray the expenses of the New York State Oil Producers Association. All of the directors signed up for 3½ cents a barrel.

I.P.A. OF TEXAS TO MEET

The Independent Petroleum Association of Texas will hold its convention in San Antonio, October 27 and 28. The program consists almost entirely of discussions of the issues of the petroleum industry. Claude C. Wild, executive vice president of the organization, expects a large attendance at the meeting.

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Of Interest to Sales Departments

GIVES ANALYST'S VIEWS ON OIL MARKETING CODE

By Paul E. Hadlick*

The National Code of Practices for Marketing Refined Petroleum Products, sponsored by the American Petroleum Institute and approved by the Federal Trade Commission July 25, 1929, is not a set of detailed directions telling the petroleum products marketer how to run his business. The code assumes he knows how to do that. It is rather a guide book setting forth the principles underlying fair, honest and proved methods, recognition and adoption of which will assure all marketers of equal opportunity, fair competition and legitimate profits. It is designed to keep the business of marketing refined petroleum products on the high plane which the nature and need of the products warrants, which the service this industry renders the public merits. It is intended to enable the marketer to distinguish between sound business methods and questionable racketeering schemes. How well it has succeeded perhaps best is told in the words of a man who is not a marketer of petroleum products, but a student of all industries and all business, and, therefore, impartial. I refer to E. St. Elmo Lewis, widely recognized business analyst. Speaking of this code, Mr. Lewis said:

"I have read your code. It is a codification of laws by which decent business may live and thrive and perform a service to society and to the people with its trade. Sign it. What are you afraid of? The other fellow? When you don't sign, the crook has an excuse. Sign it. And live up to it. Let the public know it. The man who doesn't live up to it—I say to you nail his hide to the door for the public to see. The great American publice likes a square deal. And it will help you to get it if you are square.

"We need more of the spirit of the sportsman in business. We should not think so much of sportsmanship as a method of getting the better of somebody. Let us play the game according to the rules; and its code is the rules that you have made yourself. The time is coming when the bankers who loan money, the manufacturers who give credit, and the public who trade, will wonder why you do not sign a code of decency."

Square dealing, sportsmanship, public approval—these are steps to success in any business undertaking and they are all fundamentals of the code. The code was intended to give you and your patron a square deal. It was written as the credo of the business sportsman. It has won public approval. What more can you ask?

The code offers all these advantages, all these privileges, all these ideals, and yet it has had a somewhat difficult row to hoe. It was new and untried a year ago. It has had months of severe criticism. It has been battered and assailed, condemned and cursed, cuffed and kicked. Yet its ideals are as high, its fundamental principles are right and as strong as ever they were. It has withstood the assaults of those whose condemnation was chiefly camouflage for their own misdeeds. It is remembered and respected and followed by thousands. And those who publicly have declared they would not support it, who have tried to resign from it, have not discredited the code. They succeeded only in casting suspicion upon themselves. I say to you, as I have said so often before, 16,000 marketers cannot be wrong.

*Part of paper delivered before Big Four State Jobbers, at Kansas City, October 15.

LARGE TANKER WITH MANY UNUSUAL FEATURES LAUNCHED BY SINCLAIR

The first American tanker to be built with double longitudinal bulkheads in lieu of the single center-line bulkhead was launched last week at the Fore River, Quincy, Mass., plant of the Bethlehem Shipbuilding Corp. The launching was preceded by a parade of delegates of the American Legion from all parts of the United States and was the feature event of Quincy's civic celebration. The vessel was christened by Miss Virginia Sinclair, in whose honor the ship was named.

The vessel, which was built for the Sinclair company, is said to mark an advance over previous American and European tanker design. Advantages claimed are greater stability, higher speed, virtual elimination of fire hazard, decreased evaporation losses, elimination of cargo contamination, and reduced construction and operating costs. Sinclair officials point out also that as a result of the higher speeds, the company will be able to reduce the average storage in terminals.

Miss Virginia Sinclair christening ship named in her honor. Miss Sinclair is daughter of Harry F. Sinclair, chairman, Sinclair Consolidated Oil Corp.

Methods and practices ordinarily used on naval cruisers and transatlantic liners are applied to hull design so far as these have been found adaptable to commercial service. Since the lines are faired and fine, minimizing eddy losses and greatly reducing hull resistance, the 5,000-horsepower driving machinery will permit a sea speed of 14 knots.

Other Features

Other features are summarized by the Sinclair engineers as follows: "Summer tanks eliminated. Isherwood bracketless system of construction. Iron rivets throughout, to decrease corrosion. Sprinkling system covering entire deck. Cargo tanks fitted to withstand higher pressures. Vents at top of mast and fitted with flameproof spark arrestors. Special methods of cleaning tanks. Vertical compound duplex steam pumps of high capacity, three pump rooms and three cofferdams, with separate lines and pumps to each cargo compartment. Double reduction gear turbines; steam generated in water-tube boilers at pressure of 400 pounds and with 200° of superheat; engine room auxiliaries electrically operated; feed water heated in series heaters. Gyro compass; mechanical steering device; full radio equipment for sending and receiving; compass direction finder; radio telephone connected with various living compartments of ship; submarine signal. Isolated hospital."

This vessel will have a capacity of 67,000 bbls. of cargo, 1,000 tons of bunkers and considerable space for barrelled goods and package freight. Its tonnage is 8,400 deadweight. It is equipped to carry casinghead gasoline and will ordinarily carry as many as seven grades of refined petroleum products in bulk without risk of pollution.

The Virginia Sinclair and her sister ship, the Harry F. Sinclair, Jr., still on the ways at the Fore River plant, were designed by J. G. Johnson, marine superintendent of the Sinclair Navigation Co., with J. K. Robinson as consulting engineer.

The vessels are classed both in Lloyd's and American Bureau of Shipping, thus conforming to the highest standards of both major authorities on shipbuilding. They were constructed without aid of the Jones-White Act and with no other protection against foreign competition than is afforded by American coastwise shipping laws.

TEXAS TAXES HIGHER

AUSTIN, Tex., Oct. 20.—The total 4-cent gasoline tax collected for the fiscal year ending August 31 was $32,221,529, according to the annual report of Comptroller George H. Sheppard, which is being prepared. The amount claimed as a refund was $2,292,535, leaving a total of $29,928,994 to be prorated to the highway and the available school fund. Three-fourths of it, or $22,446,745, will go to the highway fund, and one-fourth, or $7,482,248, to the schools.

CANADIAN TARIFF NOT TO INCREASE PRICES

CHATHAM, Ontario, Oct. 18—Increase of the Canadian gasoline tariff to 2½ cents, it is reported, will result in no increase in price to the ultimate consumer, though refineries have raised the price to jobbers by 2 cents a gallon. A statement by a representative of the refinery interests is as follows:

"Prices to the jobbers have been increased and thereby Canadian refiners enjoy the sole benefit that comes to them by the revised tariff. In the past, with the great surplus stocks of gasoline in the United States, Canadian refiners have had the choice of either foregoing business offerings from the jobber, or taking it at a figure based on United States markets that allowed no profit. Now, in selling to the jobber, they are in a position to earn a small return upon their investments in Canadian refining equipment and on the wages paid to Canadian labor.

"Until the recent tariff revision, jobbers were able to bring gasoline across the border and enjoy a wider margin of profit than the Canadian refiner could obtain on his own produce. Due to this situation, several refineries in western Canada have been operating at a loss for months past.

"No increase in price to farmers' co-operatives, who are dealing in gasoline on a nonprofit base for the benefit of their members, will be made. If in any instance farmers' co-operatives have been asked to pay more for gasoline, it is due to a misunderstanding somewhere which will be corrected immediately.

MAKE PLANS FOR BURNER SHOW

Preliminary plans for the eighth annual convention and oil burner show of the American Oil Burner Association in Philadelphia April 13 to 18 have been announced by Harry F. Tapp, executive secretary of the association.

Convention headquarters will be in the Benjamin Franklin Hotel and all meetings will be held there. The annual oil burner show will be held across the street on the exhibit floor of the Gimbel Building.

The show will open Monday, April 13, at 7 p.m. and thereafter until Saturday, April 18, will be open daily from 1:30 p.m. to 11 p.m. Exhibitors, as usual, are restricted to manufacturer or associate members of the association. The annual show has become the occasion for introducing new burner models and equipment improvements and information reaching the association headquarters indicates that many new and interesting developments will be revealed at the Philadelphia exposition. It will be the second consecutive show which will be open to the general public, this plan having been followed last year with outstanding success. More than 10,000 people were registered as visitors at the 1930 show in Chicago.

Business meetings and discussions of association members will be held during the morning at the hotel to allow for attendance at the show in the afternoon and evening. Reduced railroad fares to Philadelphia from all points will be available as usual.

MORE OIL BURNERS

Sales of the current year were more than 11 per cent ahead of the same period last year. Some companies reported an increase of more than 50 per cent and the directors were unanimous in their opinion that 1930 would exceed by a generous margin the record established last year when more than 125,000 oil burners were placed in American homes.

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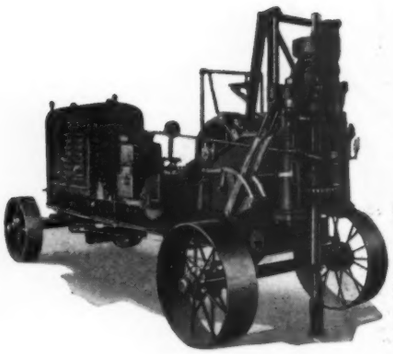
Charleston, S. C.
Savannah, Ga.

New Orleans (Gretna, La.)
Port Arthur, Texas.
Galveston, Texas.

Rotary table drive and hydraulic feed combined

OIL OPERATORS are always on the alert for changes and improvements which will eliminate waste time and increase the effectiveness of their structure drilling. Rotacore's big new feature accomplishing these results is the combination of rotary table drive with hydraulic feed, permitting immediate change from brake feed, as in rotary drilling, to hydraulic feed, as in diamond drilling! The change is quickly accomplished by loosening or tightening four chuck bolts, as required. Briefly, Rotacore combines principles of both diamond drill and rotary drill operation.



Consider the advantages of this quick change from brake feed to hydraulic feed: with brake feed the grief stem can be run in without continual rechucking, but if a hard layer is encountered, hydraulic pressure can be immediately applied by tightening the chuck bolts.

Rotacore's capacity is 3000 feet of N size hole, 2-13/16 inches in diameter, recovering 2-inch core. The hydraulic has a length of feed of 18 inches, and lifting capacity of 7 tons.

ROTACORE

Rotacore is powered with a Waukesha industrial type 45 H. P. motor complete with multiple disc dry plate clutch, 3 forward speeds and reverse.

A rotary table by means of which drill rods are rotated, is built in with recessed drive bushing through which passes a fluted or square grief stem coupled to the upper end of the rods. The grief stem can slip through the table while being rotated, the downward feed being controlled either by the hydraulic cylinders or by the cable from the drum.

All controls, including motor throttle, are at the operator's finger tips. A cat-head has been added in response to the necessities of field experience. The entire unit is mounted on a substantial steel truck with front wheels 8 inches and rear wheels 10 inches in width. Write to our branch office at Ponca City, Oklahoma, or to Minneapolis for your copy of Rotacore bulletin No. 32.

E. J. LONGYEAR COMPANY
Minneapolis, Minnesota

Mid-Continent Branch: Ponca City, Oklahoma

Longyear

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 44)

FORD COUNTY

Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ....Drlg. 4,200 ft.

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w .....Drlg. 1,500 ft.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w .....Drlg. 4,460-65 ft.; show water; underreaming 6-in. csg.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w Shut down 4,370 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w..Shut down 50 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12 .....Rig.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 .....T. D. 1,575 ft.; water; abandoned.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down 1,836 ft.

HARPER COUNTY

Atkinson et al's No. 1 Misak, SE cor. Sec. 25-34-6w .....Drlg. 4,050 ft.
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 1,830 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w .....1,635-40 ft. 2,000,000 ft. gas; cleaning out 1,900 ft.
Slick, Pryor & Lockhart's No. 1 Wetherall, NE SW Sec. 36-29-6w .....4,485-4,535 ft.; hole full water; abandoned.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ....Drlg. 4,280 ft.
McKenna et al's No. 1 Ralson, C NE Sec. 14-28-20w ....Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 .....Shut down 910 ft.

MARION COUNTY

Aladdin Pet.'s No. 1 Koch, NW NE Sec. 36-17-3 .....Rig.
Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 .....Rig on ground.
Magnolia Pet. Co.'s No. 1 Davis, SE NW Sec. 18-21-2 ....Drlg. 3,235 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 .....Shut down 1,245 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 .....Shut down 50 ft.

McPHERSON COUNTY

Aladdin Pet.'s No. 1 Rudolph, NW NE Sec. 36-18-3w....Rig.
McPherson Oil Co.'s No. 1 Kuns, SE SW Sec. 11-20-5w ..Shut down 1,400 ft.
Slick et al's No. 1 Randell, C SW SW Sec. 35-17-5w ....Rig on ground.
Perry et al's No. 1 Unruh, SE NE SE Sec. 27-20-2w ....Location; abandoned.
Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w ....Rig on ground.

MORTON COUNTY

Argus Prod. Co.'s No. 1 Plummers, C NE Sec. 11-29-41w .....Drlg. 2,885 ft.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Shut down 3,200 ft.

MORRIS COUNTY

Urschell et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7..Machine.
Pratt et al's No. 1 Whiting, NW SW SW Sec. 34-16-6 ..Shut down 350 ft.
Hankenson et al's No. 1 Cessman. SW SE Sec. 24-16-9 ..Rig.
Urschell et al's No 1 Scott. NE NW Sec. 6-16-6 .....Shut down 2,420 ft.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Shut down 410 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-8w .....Drlg. 1,450 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Fishing 4,353-95 ft.; water.

RAWLINS COUNTY

Danciger Oil & Ref.'s No. 1 Unknown, SW cor. Sec. 3-2-35w .....Rig.

RENO COUNTY

Braden et al's No. 1 Thersen, SE NE Sec. 6-22-4w .....Drlg. 2,700 ft.
Alco Royalty's No. 1 Kinney, SE cor. Sec. 16-22-7w .....Drlg. 3,120 ft.
Shell Pet. Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w ....Drlg. 3,277 ft.
E. L. Study and H. L. Turner's No. 1 Haury, NE NW Sec. 1-23-4w .....Comp. 3,313-33 ft.; 22,000,000 ft. gas.
United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w..Sand 3,545-47 ft.; water; abandoned.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w .....Simpson 4196-4,266 ft.; water; shut down.

RICE COUNTY

Muth Bros.' No. 1 Beyers, NE NW Sec. 21-19-9w .....Rig on ground.
Jasper & Beschka's No. 1 Cupp, SW NE Sec. 22-18-9w ..Drlg. 2,010-20 ft.; 7,500,000 ft. gas; shut down.
United Pet. Co.'s No. 1 Willman, NE cor. Sec. 29-21-9w ..Drlg. 2,525 ft.
Hershey Golden & Skelly's No. 1 Brandenstein, Sec. 10-19-10w .....Abandoned 3,414 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Silicious lime 3,252-53 ft.; flowing 30 bbls. an hr. when shut in.

ROOKS COUNTY

Streeter-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w .....Shut down 2,615 ft.

RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w ..Drlg. 3,550 ft.; show oil at 3,337-50 ft. which exhausted.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w ..Rig.
McPherson O. & G. Co.'s No. 1 Brack, C NW Sec. 24-17-16w .....Abandoned 3,980 ft.

RUSSELL COUNTY

Empire Oil & Ref. Co.'s No. 1 Sherwood, SE NW NW Sec. 21-14-13w .....Drlg. 735 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .....Drlg. 2,710 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Shut down 2,155 ft.

SEDGWICK COUNTY

Branson et al's No. 1 Kincaid, SE NW NW Sec. 4-28-1...Spudding.
Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1..Rig.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .....Shut down 2,155 ft.

STAFFORD COUNTY

Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w .....Drlg. 3,435 ft.
Midwest's No. 36 Richardson, SE cor. Sec. 36-22-12w ....Sand 3,542-99 ft.; swabbed 75 bbls. 17½ hrs.; shut down for tankage.

STEVENS COUNTY

Western Prod. Co.'s No. 1 Ponder, C NE Sec. 10-32-38w..Drlg. 2,210 ft.
Western Prod. Co.'s No. 4 Fee, C NE Sec. 6-33-36w .....Drlg. 1,550 ft.
Argus Prod. Co.'s No. 1 Olsen, C SE Sec. 1-32-33w .....Comp. 2,574-2,725 ft.; 13,000,000 ft. gas.
Argus Prod. Co.'s No. 1 Davis, C SW Sec. 31-32-38w .....Comp. 2,522-2,675 ft.; 8,000,000 ft. gas.
Braden et al's No. 1 Theisen, SE NE Sec. 6-22-4w .....Rig on ground.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w .....Shut down 2,523 ft.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w .....Rig.

SEWARD COUNTY

Liberal Gas' No. 1 C N half NE Sec. 4-35-34w .....Drlg. 2,080 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-23-2 ..Drlg. 3,100 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w ....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Shut down 510 ft.

SPECIFICATIONS for

LABORATORY ANALYSIS		WHAT IT MEANS TO YOUR MOTOR
Initial Boiling Point	110 Maximum	Easy starting
% distilled at 221° Fahr. % distilled at 284° Fahr. % recovery	25 Minimum 52 Minimum 97	More power, long burning stroke
End Point	400	Complete vaporization and therefore complete combustion
Doctor Test	O K	Clean odor
Corrosion Test	O K	No choking of gasoline line
Color	Plus 25	Clean, highly refined
Sulphur	1/10 of one per cent Max.	No pitting of valves
Gum Test	O K	No resinous precipitate to cause clogging of carburetor jets or sticking of valves

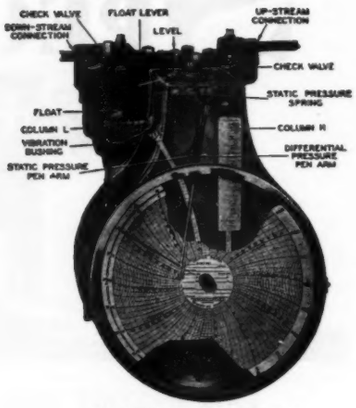
Instant starting — flashing pick-up — a mighty stream of velvet power — you get them all when you have Flashlike Gasoline in your fuel tank!

Flashlike Gasoline's low "initial boiling point"—110° F.—assures easy starting in any motor old or new. A turn or two of your crankshaft develops full power. You roll away with your motor "hitting" clean and true. And as you gather speed, there comes a sense of flying—the thrill of flashlike motoring!

With an "end point" of 400° F., Flashlike Gasoline burns clean and releases full power from every drop. Reduces the dilution of your motor oil and increases your mileage. In addition, modern testing machines show this advanced fuel has an unusually high anti-knock rating. Power impulses are as smooth and as resistless as the thrust of a steam piston. Your motor reveals greater flexibility, has a wider range of performance and lasts longer. Yet, with all these advantages, Flashlike Gasoline costs you no more than ordinary gasolines!

Humble Oil & Refining Company

Now 15 years of dependable Westcott Service



Sectional View of the 100-Inch Westcott Orifice Meter
The 50-Inch meter is similar in design

SINCE 1915, when it was first installed on a natural gas line, the Westcott Orifice Meter has won dominant recognition in the natural gas, manufactured gas, natural gasoline and petroleum industries. Today it is extensively used as the standard measuring instrument, not only for gases, but for steam and many liquids.

You will find Westcott Orifice Meters clustered around industrial centers, also in many remote locations, where implicit trust *has* to be placed in reliable operation.

And through fifteen years of dependable service the Westcott has proved itself worthy of a world-wide trust. Its correct and up-to-date design, the exact construction of orifices and differential elements, the uniform excellence of recording mechanisms—all together have endowed this meter with a degree of accuracy above and beyond the most exacting requirements of orifice metering today.

FEATURES

Uniform area of the mercury chambers.

Large area of float.

Long length of lever arm.

Small angle of movement of the pen arm.

Minimum number of moving parts.

Leverage produced by mercury acting on a large-area float at the end of a long float lever insures sensitiveness and positive pen movement.

Floats and chambers especially treated so that the meniscus of the mercury is always of the same form.

Clearance between float and side walls always sufficient to permit mercury to surround the float entirely and prevent inaccuracy due to capillary attraction or dirt collecting on the mercury.

Even the slight shift of the center of gravity of the pen arm and connections, as the pen moves throughout the range of the chart, is counterbalanced.

Every Westcott Differential Gage is tested for accuracy against a water column at 10 different ranges and its accuracy is equal to the smallest visible reading on the test gage or chart.

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MEASUREMENT ENGINEERS
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WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w..Shut down 5,721 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ....Shut down 100 ft.

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5w .....Drlg. 5,480 ft.
Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w.Shut down 5,640 ft.

GARVIN COUNTY

Nelson et al's No. 1 Strickland, NE NW Sec. 10-4-3w ..Shut down 2,652 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW SE Sec. 23-7-21w .....Drlg. 400 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w .....Drlg. 2,507 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w .....Drlg. 7,000 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....20,000,000 ft. gas 5,350-5,400 ft.; total depth 8,589 ft.; shut down; sprayed 50 bbls. gasoline; S. D.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 .....Drlg. 1,650 ft.
Mid-Western's No. 1 Polster, C NE SE Sec. 33-10-22 ....Shut down 4,230 ft.
Holden's No. 1 Phillip, SE cor. S.c. 3-9-18e .....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e ..Shut down 2,387 ft.
Sanbolse Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Shut down 1,645 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 ....1,000,000 ft. gas 2,284 ft.; shut down 4,515 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Shut down 4,270 ft.

KAY COUNTY

Blackwell Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w..Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w .....Drlg. 1,150 ft.
Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w..5,000,000 ft. gas 4,890-4,420 ft.; shut down.
Blankinship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 .....Sand 3,590-97 ft.; swabbed 34 bbls. after 40-qt. shot; flowed 34 bbls. and shut down.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....Drlg. 5,150 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Drlg. 6,445 ft.

KIOWA COUNTY

Riley et al's No. 1 Grebb, SW NE Sec. 6-7-16w .....Drlg. 1,090 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24...Drlg. 6,300 ft.; top Wilcox 6,128 ft.

LATTIMER COUNTY

LeFlore Oil Co.'s No. 1 McBee, NW cor. S.c. 5-7-21 ....Shut down 3,601 ft.
Mid-Western's No. 1 Morris, C NW SE Sec. 12-6-21 ....Shut down 1,562-1,650 ft.; dry.
Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Drlg. 2,175 ft.

LINCOLN COUNTY

Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 .....Wilcox 4,595-98 ft.; dry; second Wilcox 4,655-75 ft.; hole full water; shut down.

LOGAN COUNTY

Slick and Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w ..Drlg. 4,952 ft.
Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w .....Drlg. 5,794 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w.Sand 4,919-42 ft.; made 510 bbls. 10 hrs.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

McCLAIN COUNTY

Prairie's No. 1 Parkinson, SW NW Sec. 22-7-2w .....Drlg. 2,840 ft.

MUSKOGEE COUNTY

Mathers' No. 1 Springer, SW NE Sec. 5-11-19 .....Drlg. 125 ft.
Gillespie's No. 1 Shepard, C SW SW Sec. 35-12-19 .....Drlg. 430 ft.
Dunbar et al's No. 1 West, NE SE NE Sec. 3-11-19 .....T. D. 855 ft.; abandoned.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW Sec. 12-21-1 .....Drlg. 1,940 ft.
Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w .....Drlg. 2,430 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 4,127-57 ft.; water.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,661 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .....Wilcox 6,697-6,771 ft.; shot with 90 qts. and 140 qts.; flowed 452 bbls.
Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w ....Shut down 6,821 ft.; P. B. to 6,530 ft.; bailed water ripped csg. 5,810-40 ft.; no show; S. D.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w .....Shut down 6,440 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Shut down 6,700 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .....T. D. 7,212 ft.; P. B. to 6,280 ft.; shut down.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 3-11-2w..Shut down 6,903 ft.; plugged back to 6,319 ft.; shot 40 qts.; no show; shut down.

PAWNEE COUNTY

Morgan & Flynn's No. 1 Freeman, NW cor. Sec. 1-20-5 Drlg. 2,620 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Rig.
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 ....Drlg. 2,535 ft.
Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5 ....Drlg. 3,773 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ....Rig.

PITTSBURG COUNTY

Apex et al's No. 1 Walker, NW SE Sec. 18-7-13 .....Drlg. 910 ft.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.

POTTAWATOMIE COUNTY

The Texas Company's No. 1 Knight, SW SE Sec. 3-8-3 ..Drlg. 5,280 ft.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ....Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,905 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 .....Location.

WASHITA COUNTY

Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w .....Shut down 280 ft.

WOODS COUNTY

Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w .....T. D. 7,280 ft.; plugged back to 6,730 ft.; shot 30 qts. 6,805-25 ft.; no results.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .....Shut down 1,387 ft.

A study in contrasts

WHEN a mid-west oil company decided to change the color of their 500 gasoline and oil trucks from green to red, they made several paint stripping tests. These figures speak for themselves:

STRIPPING PROCESS	TIME CONSUMED	TRUCKS STRIPPED	QUALITY OF WORK
Ordinary method	10 hours	1	Unsatisfactory
Oakite method	8 hours	2	Excellent

You, too, can effect similar savings in time and effort by doing paint stripping jobs the economical Oakite way. Ask our nearest Service Man to explain Oakite materials and methods for doing this work, and for saving money on all oil industry cleaning jobs. A postal to us will bring him to your office. No obligation.

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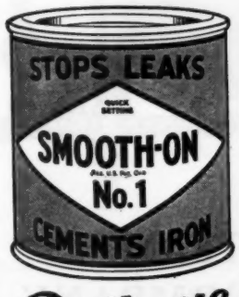
Heat need not be a factor with SMOOTH-ON No. 1 either in making the repair or making its performance perfect in service. Making the seal strong and permanent merely requires mixing the SMOOTH-ON with *cold* water and applying in a way to force the mixture deeper into the crack or joint as the SMOOTH-ON expands in hardening.

In service, the SMOOTH-ON retains its bond as it expands and contracts at the same temperature co-efficient as the surrounding metal.



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BADGETT STEAM LUBRICATOR COMPANY

CHICKASHA, OKLAHOMA

Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE

CIMARRON COUNTY

Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5 ....Drlg. 4,740 ft.

TEXAS COUNTY

Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14 .....Location.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 .....Shut down 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .....Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Brookshire's No. 1 R. W. Rowland, NW NE NE Sec. 18-3s-10 .....Shut down 100 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..Drlg. 420 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 525 ft.
Johnson et al's No. 1 Usery, SE SW SE Sec. 14-16s-7e...Shut down 485 ft.
Marshall's No. 2 fee, C SW NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Shut down 2,590 ft.

COTTON COUNTY

H. J. Dillard's No. 1 McMillan, SE NW Sec. 2-4s-13w ....Shut down 2,705 ft.

LOVE COUNTY

Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w ..Shut down 3,130 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1 ...Rig; abandoned.

MARSHALL COUNTY

Goddard Oil Co.'s No. 1 Marshall, CSL SE NW Sec. 8-6s-6 .....Machine.
Keiner Oil's No. 1 Barnard, NW NE SW Sec. 28-5s-5 ....Drlg. 501 ft.
Pace et al's No. 1 Hicks, SW NW Sec. 8-6s-7 .....T. D. 1,547 ft.; abandoned.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 ..Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e ....Shut down 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Shut down 2,287 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w .....Drlg. 600 ft.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n ....Shut down 1,060 ft.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Gray County

Gulf Production Co.'s No. 3 R. B. Thompson and others, 330 feet south and west of the NE cor. of the SW of Section 126, Block 3, I.&G.N. B. Dunlop's No. 8 J. S. Morse-C, 330 feet north and west of the SE cor. of the SW of Section 17, Block A-9, H.&G.N. B. Dunlop's No. 9 J. S. Morse-C, 330 feet north and west of the SE cor. of the SE of Section 16, Block A-9, H.&G.N. Magnolia Petroleum Co.'s No. 3 W. B. Latham, 267 feet south and 150 feet east of the most westerly NW cor. of the W. B. Latham 250.2-acre tract out of Section 153, Blk. 3, I.&G.N. Midgray Oil Co.'s No. 1 S. McCulloch, 267 feet south and 150 feet west of the NE cor. of the S. McCullough 246.9-acre tract out of Section 153, Block 3, I.&G.N. Skelly Oil Co.'s No. 1 H. Heithholt, 150 feet south and 3,806 feet east of the NW cor. of Section 153, Block 3, I.&G.N. Same company's No. 2 J. F. Vicars, 330 feet south and east of the NW cor. of the SW of Section 127, Block 3, I.&G.N. Southern Petroleum Exploration Co.'s No. 1 J. S. Baird, 330 feet north and east of the SW cor. of the NW of Section 127, Block 3, I.&G.N.

Danciger Oil & Refining Co.'s No. 7 J. S. Morse, 330 feet south and west of the NE cor. NW SW, Section 1, Block 26, H.&G.N. Survey. Midwest Exploration Co.'s No. 1-B C. T. Taylor, 660 feet south and east of the NW cor., Section 7, Block H, A. W. Wallace Survey. Cree & Hoover's No. 1 J. E. Wright, 330 feet north and 1,000 feet west of the SE cor., Section 12, Block 3, I.&G.N. Survey. Empire Gas & Fuel Co.'s No. 1 J. W. Cantrell, 330 feet north and west of the SE cor., Section 136, Block 3, I.&G.N. Survey. Same company's No. 1 Robert Sullivan, 330 feet south and east of the NW cor. of the east 64 acres of the west 104 acres of the south 264 acres of the N half, Section 136, Block 3, I.&G.N. Survey. Magnolia Petroleum Co.'s No. 2 W. B. Latham, 175 feet south and 150 feet west of the NE cor., Section 153, Block 3, I.&G.N. Survey. The Texas Company's No. 5 W. W. Harrah, 330 feet south and 990 feet west of the NE cor. SE, Section 150, Block 3, I.&G.N. Survey.

Wheeler County

Murchison & Fain's No. 20 I. Close, 660 feet north and west of the SE cor. of Section 77, Block 23, H.&G.N.

Guernsey Oil and Remo Oil Co.'s No. 1 L. Q. Sewell, 1,320 feet south and west of the NE cor., Section 38, Block 13, H.& G.N. Survey. Upham Gas Co.'s No. 3 Williams & Laycock, 660 feet north and west of the SE cor. SW, Section 5, Block 27, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

W. R. Cooper's No. 1 Dr. G. B. Hamilton, 150 feet north and east of the SW cor. of the north 40 acres of the east 80 acres of the west 340 acres of Section 5, B.B.B.&C., A-46 Survey. T. F. Hunter and others' No. 1 A. J. Lowe, 150 feet north and 1,291 feet east of the SW cor., Section 15, Crawford Subdivision. F. P. Hynes' No. 1-B J. T. Richardson, 450 feet north and 150 feet east of the SW cor. NW SW, Section 11, B.B.B.&C., A-47 Survey. H. P. Key and others' No. 1 D. W. Fish, 150 feet north and west of the SE cor. of the west 80 acres of Section 85, Club Ranch Subdivision. B. M. Lamphair and others' No. 1 J. A. Bell, 150 feet north and east of the southwest corner of the J. A. Bell tract out of Section 108, Jefferson County school land, A-240 Survey. M. Staniforth's No. 1 E. E. Threet, 150 feet south and west of the NE cor. of the south 40 acres of the east 50 acres of the E. E. Threet 150-acre tract out of the S. J. Williams Survey A-786. W. C. Young and others' No. 1 J. L. Anderson, 150 feet north and east of the SW cor. of the north 20 acres of the east 40 acres of the west 120 acres of Section 18, South Anderson Ranch Subdivision.

Beard & Hammon's No. 1 J. T. Richardson, 1,048 feet south and 1,470 feet east of the NW cor. of the J. Scott Survey A-374. Panhandle Refining Co.'s No. 1 Mrs. L. A. Snider, 150 feet north and 750 feet west of the SE cor. of Section 22, Thomas Toby Survey A-643. Perkins & Cullum's No. 1 Falls Co. Subdivision (H.O.&R.)-A, 660 feet south of the middle of the north line and the W half of Section 21, Falls County School Land, A-130. C. C. Williams No. 1 L. C. Herron, 1,000 feet south and 1,050 feet west of the NE cor. of the south 100 acres of the L. C. Herron 300-acre tract out of the William Spavin Survey A-371.

Baylor County

The Texas Company's No. 1 C. E. Holman, 1,300 feet south and 750 feet east of the NW cor., Section 110, T.&N.O., A-750 Survey.

Brown County

J. Amyx and others' No. 1 E. F. George, 822 feet north and 150 feet west of the SE cor. of the E. A. Evans Survey No. 603, A-1,613. S. B. Owens and others' No. 1 J. C. Puckett heirs, 1,130 feet north and 450 feet west of the SE cor. of Section 46, H.T.&B. W. Farrish and others' No. 1 J. M. Fields, 150

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feet south and west of the SW cor. of the H. H. Hamilton 175-acre tract and located on the J. M. Fields 469-acre tract out of the Charles J. Carrier Survey No. 60.

Stratton & Gully's No. 1 Mrs. A. Armstrong, 1,550 feet north and 3,375 feet east of the SW cor. of the H.&G.N. Survey No. 1, A-1,217.

Clay County

Mid-Continent Holding Corp.'s No. 9 J. D. Stine and others-A, 1,050 feet north and 500 feet east of the SW cor. of Section 7, Parker County School Land, A-374.

Callahan County

Glengary Oil Co.'s No. 1 W. P. West, 600 feet south and 800 feet east of the NE cor. S half, Section 5, T.&N.O. Survey, and located in the W. H. Johnson Survey No. 2. R. Guffey and others' No. 1 E. Cook, 150 feet north and 750 feet east of the SW cor. E half, Section 110, B.B.B.&C. Survey. Southern Petroleum Exploration Co.'s No. 1 H. W. Ross, 1,540 feet south and 660 feet west of the NE cor., Section 98, B.B.B.&C. Survey.

Coleman County

Barnsdall Oil Co.'s No. 1 F. Golson, 1,913 feet south and 570 feet east of NW cor. of I. Harris Survey No. 164, being 150 feet north and east of the SW cor. of their 82-acre lease. Prairie Oil & Gas Co.'s No. 1 F. Golson, 2,213 feet south and 1,027 feet east of the NW cor. of the I. Harris Survey No. 164, being 150 feet south and east of the NW cor. of the lease. Guffey Brothers and others' No. 1 L. A. Taylor, 450 feet north and 150 feet west of the SE cor. of the L. A. Taylor 241-acre tract out of the B. Alderata Survey No. 273. Hoffman & Page and others' No. 1 J. A. Horne, 1,400 feet north and 800 feet west of the SE cor. of Section 14, Block 1, G.H.&H.

Galt-Brown and others' No. 3 S. C. Stewardson, 2,790 feet north and west of the NE cor., Section 81, E.T.R.R. Survey, and located in the Robert Wilson Survey No. 334. Joines and others' No. 2 J. B. Turner, 2,585 feet north and 2,300 feet east of the SW cor. of the W. Skurlock Survey No. 280.

Collin County

Stripe & Brewer's No. 1 W. T. Jennings, 150 feet north and 850 feet west of the most westerly SE cor. of the Susannah Walker Survey.

Cooke County

W. B. Hamilton and others' No. 2 C. Jacobs, 835 feet north and 150 feet east of the SW cor. of the west 40 acres of the south 80 acres of the north 121 acres of the C. Jacobs 241-acre tract out of the J. Strickland Survey A-929. Deep Rock Oil and Faith Oil Co.'s No. 2 J. J. Perkins, 550 feet south and 150 feet west of the NE cor. of the east 19 acres of the J. J. Perkins 168-acre tract out of the William McClelland Survey A-752.

R. Bourland and others' No. 1 J. M. Sitzes, 150 feet north and east of the SW cor. of the north 50 acres of the J. M. Sitzes 100-acre tract out of the D. Vance Survey A-1,074. Gray-Texas Oil Co.'s No. 1 M. Riley, 150 feet north and west of the SE cor. of the north 80 acres of the F. Lindsey Survey A-591. Simms Oil Co.'s No. 1 C. Jacobs, 150 feet south and 450 feet east of the NW cor. of the south 120 acres of the C. Jacobs 241-acre tract out of the J. Strickland Survey A-929. Deep Rock Oil and Faith Oil Co.'s No. 2 R. M. Lawson, 450 feet north and east of the SW cor. of the R. M. Lawson 210.5-acre tract out of the H. Nail Survey A-790.

Crane County

Gulf Production Co.'s No. 87 J. T. McElroy, 2,762 feet south and 990 feet west of the NE cor. of the Gulf Production Co.'s lease out of Section 201, Block F, C.C.S.D.&R.G.N.G. Survey. Gulf Production Co.'s No. 4-B J. T. McElroy, 1,442 feet south and 1,650 feet west of the most easterly northeast corner of Gulf Production Co.'s lease out of Section 216, Block F, C.C.S.D.&R.G.N.G. Survey. Simms Oil and Atlantic Oil Producing Co.'s No. 3-E University, 1,650 feet south and 990 feet west of the NE cor., Section 34, Block 30, University Land.

Denton County

The Texas Company and Benson Brothers' No. 1 E. C. Yeatts, 1,424 feet south and 150 feet east of the NE cor. of the M. Mathews Survey and located in the W. Hendricks Survey. A. W. Walker's No. 1 E. Wilson, 1,950 feet north and 2,350 feet east of the most southerly SW cor. of the S. Williams Survey, being 150 feet north and west of the SE cor. of the E. Wilson 178-acre tract.

Eastland County

Hickory Oil & Gas Co.'s No. 1 C. H. Fee, C NW, Section 77, Block 4, H.& T.C. Survey.

Fisher County

Condor Petroleum Co.'s No. 1 M. V. Wilson, 330 feet south and 1,200 feet east of the NW cor. of Section 6, Block R, W. E. Richardson Survey. The Texas Company's No. 2 D. W. Stephens, 334 feet north and 330 feet west of the SE cor. of Section 79, Block 1, H.&T.C. The Texas Company's No. 1 M. A. Teagarden-B, 1,990 feet north and 440 feet west of the SE cor. of Section 8, Block R, W. E. Richardson Survey.

Garza County

Pandem Oil Corp.'s No. 2 K. Stoker, 330 feet south and 990 feet west of the NE cor., Section 31, Block 5, G.H.&H. Survey.

Central Oil Co.'s No. 2 H. Horney, 150 feet south and 1,320 feet west of the NE cor., Section 3, Block 3, H.&T.C. Survey.

Howard County

Magnolia Petroleum Co.'s No. 5 S. Hyman, 450 feet north and 2,310 feet east of the SW cor. of Section 113, Block 29, W.&N.W.R.R. Merrick & Lamb's No. 16 H. R. Clay, 1,495 feet north and 1,813 feet west of the SE cor. of Section 126, Block 29, W.&N.W.R.R.

Loving County

Rush-Anderson & Moor's No. 1 J. Wheat, 330 feet southeast of the northwest line and 330 feet northeast of the southwest line of Section 77, Block 1, W.&N.W.R.R. Survey. The California Co.'s No. 6 Reagan & McElvain, 330 feet northeast of the southwest line and 1,650 feet northwest of the southeast line of Section 84, Block 1, W.&N.W.R.R. Survey.

The California Co.'s No. 5 Reagan & McElvain, 990 feet SE of the NW line and 330 feet SW of the NE line of Section 84, Block 1, W.&N.W.R.R. Lewis & Slagel Drlg. Co.'s No. 1 L. D. Cartwright and others, 2,310 feet north and 990 feet east of the SW cor. of Section 1, Block 57, Township 1, T.&R. Independent Oil & Gas Co.'s No. 2 J. Wheat, 990 feet SE of the NW line and 330 feet NE of the SW line of Section 85, Block 1, W.&N.W.R.R.

Mitchell County

Lewis & Slagel's No. 1 A. M. Bell, 330 feet south and east of the NW cor. of the SE of Section 12, Block 30, T-1-S. T.&P.

Palo Pinto County

Texas Pacific Coal & Oil Co.'s No. 1 E. V. Robinson, 2,700 feet north and 2,310 feet east of the SW cor., Section 64, Block 3, T.&P. Survey.

Root & Rhodes' No. 3 M. B. Costello, 570 feet SW of the NE line and 900 feet SE of the NW line of the M. B. Costello 116.5-acre tract out of the R. R. Williams Survey A-896. Z. Strong's No. 1 Mrs. Sleigh, 600 feet southeast of the northwest line and 600 feet northeast of the southwest line of the Mrs. Sleigh 206-acre tract out of the R. Clark Survey A-135.

Pecos County

Cardinal Oil Co.'s No. 1-F J. H. ippett (Shell), 1,250 feet south and 150 feet east of the SE cor. of the Arnold & Barrett Survey No. 539, A-3, and located in Section 61, Block 194, G.C.&S.F., being 150 feet north and east of the SW cor. of their 160-acre lease.

J. R. Bell and others' No. 1 H. J. Eaton, 2,310 feet southwest of the northeast line and 900 feet northwest of the southeast line of Section 33, Block 3, H.&T.C. Survey. J. R. Bell and others' No. 1 Scharff & Blackman, 2,310 feet northeast of the northeast line of Section 37 and 330 feet northwest of the northwest line of Section 35 and located in Section 38, Block 3, H.&T.C. Survey.

Stephens County

Southern Petroleum Exploration Co.'s No. 1 A. Drumond, 780 feet north and 1,000 feet east of the SW cor., Section

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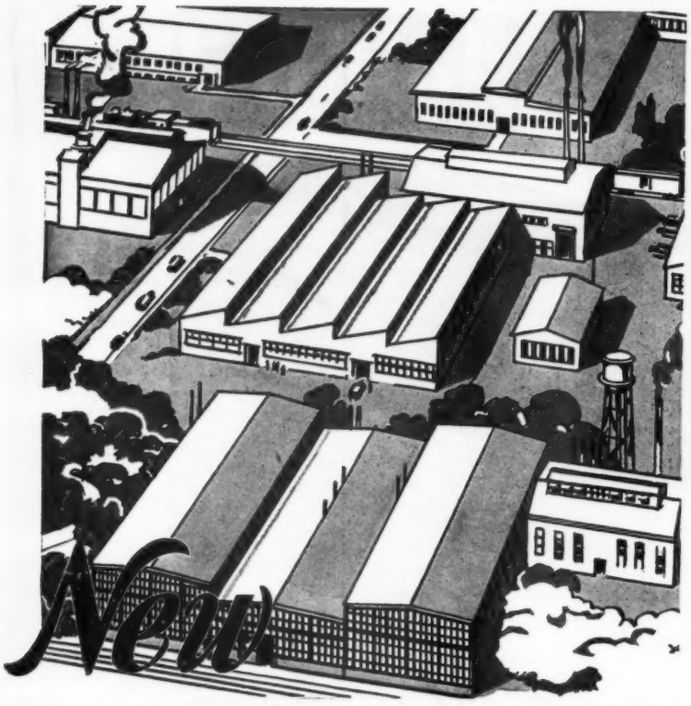

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114, T.E.&L. Survey. Texas Pacific Coal & Oil Co.'s No. 5 J. R. Jackson, 450 feet north and 300 feet east of the SW cor., Section 66, Block 4, T.&P. Survey.

Shackelford County

S. A. Thompson's No. 1 Mrs. L. Griffith, 600 feet north and 150 feet west of the SE cor., Section 37, Lunatic Asylum land.

Throckmorton County

Gulf Prod. Co.'s No. 3 J. A. Matthews, 1,966.6 feet south and 450 feet west of the NW cor. of the M. D. Reynolds Survey A-998 and located in the Narcissa Thompson Survey, A-255.

Upton County

C. C. Duffey and others' No. 2 H. L. McClintic, 990 feet south and 330 feet west of the NE cor., Section 206, Block F, C.C.S.D.&R.G.N.G. Survey. Weekley Oil Corp. and others' No. 1 J. H. Shirk, 468 feet north and 2,317 feet west of the SE cor., Section 15, Block 3, M.K.&T. Survey.

Ward County

Gulf Production Co.'s No. 15 G. W. O'Brien and others, 330 feet north and 3,000 feet east of the SW cor. of Section 6, Block F, G.M.M.B.&A. The California Co. and Atlantic Oil Producing Co.'s No. 1 E. F. Lanham, 990 feet southwest of the northeast line and 990 feet northwest of the SE line of Section 35, Block 34, H.&T.C. S. Richardson and others' No. 5 G. W. O'Brien and others, 330 feet south and 3,000 feet east of the NW cor. of Section 5, Block F, G.M.M.B.&A.

The California Co. and Atlantic Oil Purchasing Co.'s No. 1 S. R. Allen, 2,310 feet southwest of the northeast line and 330 feet northwest of the southeast line of Section 30, Block 34, H.&T.C. Survey.

Wichita County

George J. Proctor's No. 3 W. B. Honaker, 750 feet south and 150 feet east of the NW cor. of their 40-acre lease out of Section 1, C.&M., A-379.

Comac Drilling Co. and others' No. 1 J. F. Boyd, 780 feet south and 350 feet east of the NW cor. of the J. T. Lewis Survey A-462, being 450 feet north and west of the SE cor. of the east 20 acres of the north 40 acres of Lot 13. C. Everts and others' No. 1 A. Volkart, 150 feet south and east of the NW cor. SW, Section 309, Waggoner Colony Subdivision. Roden and others' No. 1 F. M. Meyers, 1,933 feet north and 1,133 feet east of the SW cor., Section 831, T.E.&L., A-288 Survey.

Winkler County

Magnolia Petroleum Co.'s No. 1 M. J. Bashara, 1,650 feet north and 2,310 feet east of the SW cor. of Section 17, Block B-3, School Land.

Young County

F. Ard and others' No. 1 D. L. Keith, 150 feet north and west of the SE cor., Section 28, T.E.&L. Survey. B. C. Banner's No. 1 W. T. Finch heirs, 150 feet south and west of the NE cor. SW, Section 40, T.E.&L. Survey. B. C. Banner's No. 1 T. J. Routon, 150 feet north and east of the SW cor. N half, Section 23, T.E.&L. Survey. J. A. Bearman and others' No. 1 C. Baldwin, 150 feet south and east of the NW cor. of the south 20 acres of the east 40 acres of the N half, Section 20, T.E.&L. Survey. B. F. Caldwell and others' No. 1 H. A. Fury Realty Co., 150 feet north and west of the SE cor. N half, Section 64, T.E.&L. Survey. C. E. Cloyes' No. 1 E. G. Williamson, 150 feet north and west of the SE cor. N half NW, Section 602, T.E.&L. Survey. Consolidated Oil Co.'s No. 1 N. Berry, 1,050 feet north and 150 feet east of the SW cor. SW, Section 81, T.E.&L. Survey. W. H. Hammon's No. 1-E S. R. Jeffery, 150 feet north and 450 feet east of the SW cor. SE, Section 58, T.E.&L. Survey.

Jacob Oil & Gas Co.'s No. 1 W. T. Finch heirs, 150 feet south and 250 feet west of the NE cor. W half SE, Section 38, T.E.&L. Survey. Lloyd Oil Corp.'s No. 1 J. T. Marshall, 150 feet south and east of the northwest corner of the J. T. Marshall 44.1-acre tract out of Section 1,934, T.E.&L. Survey. C. A. Norment's No. 1 L. Parrish, 450 feet north and 150 feet west of the southeast corner of the north 20 acres of the west 40 acres of Section 409, T.E.&L. Survey. Ramsey & Decker's No. 1 I. H. Gaithright, 150 feet north and west of the SE cor. N half NW, Section 607, T.E.&L. Survey. C. E. Scott's No. 1 G. McClure, 150 feet north and west of the SE cor., Section 1953, T.E.&L. Survey. Wilcox and others' No. 1 A. Furr, 150 feet north and 900 feet east of the SW cor. SW, Section 338, T.E.&L. Survey. T. G. Williams' No. 1 B. F. Smith, 150 feet north and west of the southeast corner of the B. F. Smith 74.5-acre tract out of Section 3,401, T. E.&L. Survey. Wooten & Reed's No. 2 J. R. Bryan and others, 150 feet south and 1,320 feet west of the NE cor., Section 1,902, T.E.&L. Survey. Young Brothers & Alexander's No. 9 E. M. Remington, 150 feet north and east of the SW cor. W half NW, Section 2,248, T.E.&L. Survey. Denham and others' No. 1 R. J. Johnson, 150 feet south and east of the NW cor., Section 733, T.E.&L. Survey. W. C. Marshall, trustee's No. 1 R. J. Johnson, 525 feet north and 634 feet east of the SW cor. N half, Section 2,927, T. E.&L. Survey. Terrell and others' No. 1 R. Bullock, 1,062 feet south and 750 feet east of the most northerly northwest corner of the A. McLennan Survey, A-180.

George Alexander, Jr.'s No. 1 S. R. Jeffery, 150 feet south and west of the NE cor. of the SW of Section 56, T.E. &L. Arkansas Fuel Oil Co.'s No. 1 J. W. Bullock, 957 feet south and 933 feet west of the NE cor. of Section 344, T.E.&L. J. T. Cloyes' No. 1 M. K. Graham, 450 feet south and 750 feet east of the NW cor. of Section 613, T.E.&L. P. Fowler's No. 1 R. E. Hill-C, 750 feet north and 150 feet west of the SE cor. of the west 44.19 acres of the north 166 acres of Section 195, T.E.&L. N. D. Goldsmith's No. 1 A. E. Klenk, 150 feet north and west of the SE cor. of Section 174, T.E.&L. Julian Oil and Stripling's No. 11 J. F. Larimore, 1,050 feet north and 450 feet west of the SE cor. of the N half of Section 2,246, T.E.&L.

Primrose Refining and Fullerton's No. 1 A. E. Logan, 150 feet south and 450 feet east of the NW cor. of the north 20 acres of the SW of Section 2,251, T.E.&L. E. R. Riggs' No. 1 J. M. Kirkland, 1,350 feet south and 150 feet west of the NE cor. of the J. M. Kirkland 120-acre tract out of Section 2,249, T. E.&L. E. R. Riggs' No. 2 J. M. Kirkland, 1,350 feet south and 450 feet west of the NE cor. of the J. M. Kirkland 120-acre tract out of Section 2,249, T.E. &L. Willis & Terrell's No. 3 Belknap Coal Co., 750 feet south and west of the NE cor. of the N half of the NE of Section 2,250, T.E.&L. Wootten & Reed's No. 2 J. A. Horton, 1,050 feet north and 750 feet east of the SW cor. of Section 1,906, T.E.&L. Grubbs and others' No. 1 W. R. Weaver, 466 feet north and 150 feet east of the SW cor. of the E half of the north 213.3 acres of Section 2,950, T.E.&L. R. N. Hamilton and others' No. 1 C. G. Mills estate, 150 feet north and 2,650 feet east of the SW cor. of Section 15, T.E.&L. R. N. Hamilton and others' No. 1 Mills (Vannoy), 3,400 feet south and 1,500 feet east of the NW cor. of the R. Edwards Survey A-90. Rubsam & Maer and others' No. 1 T. J. Routon, 150 feet south and west of the NE cor. of the NE of Section 736, T.E.&L. Terrell & Wainwright's No. 1 D. Bullock, 150 feet south and east of the NW cor. of the E half of the SE of Section 419, T.E.&L. J. E. Thompson and others' No. 2 J. W. Daws, 175 feet north and east of the SW cor. of the NW of Section 752, T.E.&L. Towne Oil Corp.'s No. 1 J. L. Rhodes, 1,270 feet south and east of the NW cor. of the J. W. Howard Survey, A-1,604. Willis & Terrell's No. 1 V. R. Jordan, 1,696 feet south and 1,280 feet west of the NE cor. of the L. Fortune Survey, A-1,894, being 150 feet north and east of the SW cor. of their 60-acre lease.

Corrections

Crane County—Great Basin Oil Co.'s No. 1 M. T. Eudaley, 2,140 feet southeast of the northwest line and 1,170 feet northeast of the southwest line of Section 36, Block 4, H.&T.C. (old dry hole of April 28, 1928).

Jack County—Rathke Oil Co.'s No. 1 G. M. Kinder, 1,144 feet north and 330 feet west of the SE cor. of the W. B. Jacobs Survey No. 2, A-2,200.

Coleman County—Brown & Ekholm and others' No. 1 F. Golson, 1,913 feet

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south and 270 feet east of the NW cor. of the I. Harris Survey No. 164, being 150 feet north and west of the SE cor. of their lease.

Stephens County—J. Urban and others' No. 1 G. Riddle, 330 feet south and 1,650 feet west of the NE cor. of Section 46, Block 6, T.&P.

Ward County—Rector Oil Co.'s No. 1 State Land, 990 feet southeast of the northwest line and 900 feet northeast of the southwest line of Section 30, Block 4, H.&T.C. (This well plugged July 21, 1928.)

Wichita County—Lambert & Trout's No. 6 W. W. Overby, 1,196 feet north and 1,031 feet east of the SW cor. of the J. M. Sharp Survey A-262. (This well completed July 23, 1930; initial production 50 bbls.)

In Brown County: W. Farrish and others' No. 1 J. M. Fields, 150 feet south of the southeast corner of the H. H. Hamilton 175-acre tract and located on the J. M. Fields 460-acre tract out of the Charles J. Carrier Survey, No. 60. Hynes & Engle's No. 1 E. R. Leach, 700 feet south and 300 feet west of the northeast corner of the west half of the E. R. Leach 165-acre tract out of the B.B.B.& C. Survey, No. 69, A-127.

2,000-BBL. WELL IN HANOVER, GERMANY

Germany produced 711,000 bbls. of crude oil in 1929, a daily average of 1,946 bbls., or much less than 1 per cent of the world's production, which fact has made many American oil men wonder why so competent an oil man as H. F. Sinclair should become as deeply interested in that country's oil possibilities as his recent movements have indicated. Mr. Sinclair is said to have acquired by purchase or concession leases on many hundreds of thousands of acres of land in various parts of the German republic and has already drilled some wells on his properties.

A well recently completed in the Nienhagen Field in Hanover, Germany, which was reported having had an initial production of 7,500 bbls. a day gave rise to the thought that Mr. Sinclair knew what he was doing when he invaded Germany.

Alfred Wirth, of Alfred Wirth & Co., Erkenlenz, Rhineland, Germany, who was a visitor at the International Petroleum Exposition in Tulsa, is a large manufacturer of oil field equipment and is well posted on European oil conditions. His attention was called to the report on the German gusher. He had just received a report from a home representative in which mention was made of the new well. It is No. 38 on the property of the Gewerkschaft Elwerath, in the new field of Nienhagen. Oil was found at a depth of about 900 meters, or about 2,925 feet. The well was drilled with a rotation apparatus with crowns set with high grade special steel, and constructed by Alfred Wirth & Co.

The well started off at about 2,000 bbls. a day but before it could be shut in had settled to about 750 bbls. a day. The gas pressure was so heavy that there was difficulty and delay in shutting in the well.

The owners are faced with the problem of finding a market for the crude as the crude oil refining industry in Germany is on a very small scale, but Mr. Wirth said he understood that serious efforts were being made to organize a refining company that would build a plant large enough to handle the production of the wells brought in in the last few months in the Hanover fields.

JAPANESE COMPANY IN BORNEO

After several years of negotiation between the Oost Borneo Maatschappij and the Mitsui Bussan Kaisha, a new Japanese company, founded with the co-operation of the Mitsui and the Nippon Oil Co., has applied for permission to work in the Sankoelirang Bay concessions in Borneo. It is understood arrangements have been practically concluded. Materials have already been brought from Japan and provisional work has been done.

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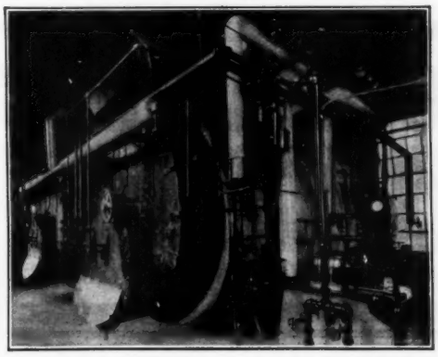

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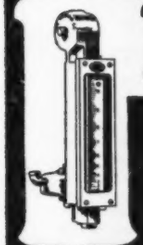

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REPORT OF OPERATIONS IN PERU AND COLOMBIA

CHATHAM, Ontario, Oct. 18.—International Petroleum Co. of Toronto has issued an official statement covering its operation in Peru and Colombia in August and September. In Peru nine wells were completed in August with an average initial production of 537 bbls. Total crude production in August was 766,249 bbls. and total crude shipments 341,271 bbls. The average daily production in September was 25,037 bbls., the curtailment being continued.

In Colombia nine wells were completed in August with average initial production of 401 bbls. Crude production for the month totaled 1,747,202 bbls., with shipments of 1,475,162 bbls. The average daily production in September was 54,631 bbls.

For the eight months of 1930 ending August 31, 82 producing wells were completed in Peru averaging 423 bbls. initial production. Total crude production was 6,755,962 bbls. and crude shipments were 3,202,415 bbls.

In the same period there were 82 producing wells completed in Colombia averaging 644 bbls. initial production, while total crude production amounted to 13,592,550 bbls. and shipments to 12,745,101 bbls.

RULISON SHALE PLANT

American oil shales will yield petroleum with reasonable satisfaction through the use of retorts of types now available for large scale operation, it has been demonstrated at the experimental oil shale plant operated by the Bureau of Mines at Rulison, Colo. The plant, according to information furnished by the bureau October 11 was operated with a view to determining the feasibility of producing shale oil for a future supply for the navy or during national emergency. Under such conditions, the shales offer an available reserve supply of oil, it has been determined. Laboratory work is now progressing in the refining of oil obtained during operation of the experimental plant.

ARKANSAS GEOLOGY

Bulletin No. 3, "The Geology of the Arkansas Paleozic Area with Especial Reference to Oil and Gas Possibilities," by Dr. Carey Croneis, is announced by Dr. George C. Branner, head of the Arkansas Geological Survey at Little Rock. This is the long-awaited discussion and report on the results of a survey of the Arkansas River Valley territory and the area north to the Missouri line Doctor Croneis and the Arkansas Survey have been engaged upon for the past few years, and is of particular interest in view of the present activity in that part of the State, particularly in Johnson and Pope Counties.

UTAH JOINS PROTEST

WASHINGTON, D. C., Oct. 20.—The State of Utah will join with Colorado in court proceedings here opposing the right of the Secretary of the Interior to reject applications to prospect for oil and gas on the public domain. This is a mandamas proceeding in the Court of Appeals of the District of Columbia in what is known as the McLennan case.—C. E. K.

I.P.T. MEETINGS

The Institution of Petroleum Technologists will hold general meetings at the Royal Society of Arts, John Street, Adelphi, London, W.C. 2, October 14, November 11, December 9, January 13, February 10, March 10 and 31; (annual general meeting), April 14 and May 12.

MRS. HARRY F. PERKINS DIES

Mrs. Harry F. Perkins, wife of Doctor Perkins, vice president of Metalfoils, Inc., of St. Louis, and widely known throughout the industry as an expert on problems relating to corrosion, died recently.

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Detailed Operations in All Fields Month of September

SUMMARY OF ALL FIELDS

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	237	1,380	47	63
Central Ohio	85	767	24	35
Lima	25	62	3	15
Indiana	23	109	10	5
Michigan	34	3,685	13	3
Kentucky	67	842	21	10
Illinois	11	197	3	0
Kansas	117	11,799	46	85
Oklahoma	296	714,461	77	35
North Cen. Texas	156	3,352	102	7
East Central Texas	25	17,198	9	0
East Texas	3	.....	1	2
West Texas	56	41,720	21	0
Panhandle Texas	68	12,264	10	22
Gulf Coast	93	23,987	41	2
Southwest Texas	84	13,836	39	8
North Louisiana	67	1,426	22	27
Arkansas	11	505	7	0
Mississippi	13	.....	7	6
Montana	28	1,184	14	7
Wyoming	18	2,625	2	5
Colorado	6	.....	3	3
New Mexico	28	197,724	4	0
Total Sept.	1,551	1,049,123	526	290
Total Aug.	1,888	1,146,527	660	295
Difference	337	97,404	134	5

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	51	223	274
Central Ohio	43	158	201
Lima	3	25	28
Indiana	5	45	50
Michigan	53	102	155
Kentucky	10	135	145
Tennessee	1	16	17
Illinois	2	39	41
Missouri	..	4	4
Kansas	30	215	245
Oklahoma	99	630	729
North Central Texas	48	267	315
East Central Texas	4	38	42
East Texas	7	15	22
West Texas	26	177	203
Panhandle Texas	36	105	141
Gulf Coast	15	180	195
Southwest Texas	97	190	287
North Louisiana	48	100	148
Arkansas	12	41	53
Mississippi	8	27	35
Alabama	2	3	5
Montana	22	86	108
Wyoming	27	120	147
Colorado	12	80	92
New Mexico	18	109	127
Utah	1	29	30
Total September	680	3,159	3,839
Total August	809	3,255	4,064
Difference	129	96	225

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

WELLS COMPLETED

County—	Comp.	Prod.	Dry	Gas
Caddo	14	3,661	1	2
Carter	18	9,039	1	1
Creek	16	1,090	6	2
Lincoln	8	2,861	5	1
Marshall	5	.....	5	0
Muskogee	16	65	10	3
Okfuskee	7	565	1	1
Oklahoma	99	681,441	4	3
Okmulgee	7	22	1	4
Osage	17	655	7	1
Pawnee	7	18	3	1
Payne	5	875	2	1
Pontotoc	4	95	1	0
Pottawatomie	11	1,944	5	0
Seminole	23	11,653	8	1
Stephens	6	32	3	1
Wagoner	6	35	4	0
Miscellaneous	27	410	10	13
Total September	296	714,461	77	35
Total August	292	730,669	85	30
Difference	4	16,208	8	5

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	0	2	2
Atoka	0	1	1
Beckham	0	7	7
Blaine	0	1	1
Bryan	0	4	4
Caddo	1	10	11
Canadian	0	1	1
Cherokee	0	1	1
Coal	0	3	3
Carter	10	17	27
Cleveland	2	8	10
Comanche	1	5	6
Cotton	5	0	5
Creek	10	41	51
Garfield	0	5	5
Garvin	0	2	2
Grady	0	2	2
Greer	0	2	2
Grant	0	3	3
Harper	0	2	2
Harmon	0	1	1
Hughes	0	18	18
Haskell	0	2	2
Kay	1	7	8
Kiowa	0	2	2
Kingfisher	0	2	2
LeFlore	0	2	2
Lincoln	0	3	3
Latimer	2	2	4
Logan	0	8	8
Love	0	1	1
McClain	1	0	1
McIntosh	0	2	2
Marshall	1	4	5
Muskogee	6	32	38
Noble	1	7	8
Okfuskee	3	16	19
Oklahoma	20	230	250
Okmulgee	4	9	13
Osage	4	22	26
Pawnee	3	16	19
Payne	1	10	11
Pittsburg	2	6	8
Pontotoc	1	9	10
Pottawatomie	4	32	36
Roger Mills	1	1	2
Seminole	7	36	43
Stephens	6	4	10
Tulsa	0	10	10
Wagoner	2	16	18
Woods	0	2	2
Woodward	0	1	1
Total September	99	630	729
Total August	112	707	819
Difference	13	77	90

WELLS COMPLETED

CADDO COUNTY

26- 6-10w Curtis, English Drlg. Co. 1 .. 15
36- 6-10w Rowe, Noble & Olsen et al 4.. 495
11- 5- 9w Lackey, Magnolia Pet. Co. 3 233
Lackey, Magnolia Pet. Co. 6 700
12- 5- 9w Rigney, Rhome et al 3 .... gas
2- 5- 9w Wade, Mid-Kansas O. & G. Co. and Ramsey Pet. 9 .. 275
12- 5- 9w Royce, Bullock et al 2 70
36- 6-10w Niles, Magnolia Pet. Co. 8 .. 750
Niles, Magnolia Pet. Co. 9 .. 31
Lindsey, Magnolia Pet. Co. 8 32
Lindsey, Magnolia Pet. Co. 9 270
12- 5- 9w Rigney, J. B. Nichols 1 .... dry
36- 6-10w Caddo-Rowe, Magnolia Pet. Co. 8 790
11- 5- 9w Lackey, Mid-Kansas O. & G. Co. and Ramsey Pet. 6 ... gas

Wells completed 14
Production 3661
Dry 1
Gas 2
Gas production 20,800,000

CARTER COUNTY

24-1s-3w Hooks, Magnolia Pet. Co. 2 ..1454
24-1s-3w Spigner, Magnolia Pet. Co. 3.. 410
Mitchell, Trevelyn Oil Co. 3 ..1200
Hooks, Wirt Franklin Pet. Corp. 2 1300
11-2s-3w C. Morris, Wirt Franklin Pet. Corp. 5 130
13-1s-3w Brady, Magnolia Pet. Co. 1 .. 76
Hooks, Hudson et al 1 386
24-1s-3w Mitchell, Merrick et al 1 1919
Eaves, The Texas Company 3 341
Eaves, Anderson et al 3 100
Hooks, Magnolia Pet. Co. 1 .. 100
Mitchell, Wirt Franklin Pet. Corp. 2 80
Mitchell, Wirt Franklin Pet. Corp. 3 75
25-4s-3w Coffee, Lively & Hall 1 5
24-1s-3w J. Franklin, Carter Oil Co. 1.. 910
Spigner, Wirt Franklin Pet. Corp. 2 553
14-2s-2w Noble, K. W. B. Drlg. Co. 1.. gas
25-4s-3w Worsham, E. S. Lamb et al 1 dry

Wells completed 18
Production 9039
Dry 1
Gas 1
Gas production 750,000

CREEK COUNTY

36-19- 7 Pigeon, Tidal Oil Co. 1 80
20-19- 9 Carter, Phillips Pet. Co. and Gled Oil 4 550
27-17-12 Rogers, Chestnut & Smith 1-A dry
16-15- 8 Knight, Billingslea et al 3 ... dry
32-17-12 Stewart, Murta et al 1 ..... dry
14-17-10 Baker, Ted Ray Oil Corp. 1-A 20
10-17- 9 Bruce, Shell Pet. Corp. 8 15
26-17- 9 Bright, Gilcrease Oil Co. 1 ... dry
35-16-13 Lewis, Robbins et al 10 ..... dry
36-15- 7 Bigpond, Olean Pet. Co. 5-A .. 250
6-14- 9 Long, Tibbins O. & G. Co. 1 .. gas
21-19- 9 Bible, McCullough et al 1 30
1-18- 8 Nave, Westfall Drlg. Co. 1 .. dry
10-15- 8 Replogle, Skelly Oil Co. 2 .... gas
11-19- 9 Henneha, Johnson O. & R. Co. 1 140
2-17-10 Self, C. B. Oil Co. 3 5

Wells completed 16
Production 1090
Dry 6
Gas 2
Gas production 5,000,000

LINCOLN COUNTY

26-17-3 Kilmer, Mid-Continent Pet. Corp. 1 ..... gas
17-14-4 Wagner, Magnolia Pet. Co. 3 ..1432
9-14-4 Fee, Thomas B. Slick Oil Co. 1. dry
13-14-3 Grof, Thomas B. Slick Oil Co. 1. dry
28-17-2 Stufflebeam, Mid-Okla. Oil Co. 1 dry
2-13-4 Winship, Magnolia Pet. Co. 1 .. dry
8-14-4 Gillian, Magnolia Pet. Co. 3 ..1429
17-14-4 S. Henry, Magnolia Pet. Co. 1.. dry

Wells completed 8
Production 2861
Dry 5
Gas 1
Gas production 3,500,000

MARSHALL COUNTY

26-5s-5 Cliff, Hartley et al 1..... dry
30-6s-6 Davis-Sullivan, Bilbo Oil Trust Co. 7 ..... dry
Rutland, Magnolia Pet. Co. 3 .. dry
13-5s-5 McComas, J. C. Deas et al 1... dry
4-6s-6 Monday, R. L. Keener et al 1.. dry

Wells completed 5
Dry 5

MUSKOGEE COUNTY

8-15-15 Barnett, Babcock Bros. et al 9 25
6-15-15 Charles, Ethel Corp. 2 ..... dry
15-15-18 Roberts, Parks et al 2 ..... dry
20-15-18 Begum, Beam et al 1 ..... gas
4-15-15 Simmons, Bryan Pet. Co. 2 ... 15
5-13-16 Flowers, Graves et al 6 ..... dry
14-13-18 Foreman, Flannigan et al 3 .. gas
5-11-19 Shetley, Dunbar et al 1 ..... dry
20-15-18 Lowery, E. Mills et al 1 ..... dry
4-13-16 Manuel, George et al 1 25
8-11-19 Willis, Dunbar et al 1 ..... dry
8-15- 8 M. Stedham, J. L. Haner 9 .. dry
14-13-16 Davis, J. R. Graves et al 1 .. gas
32-12-19 Taylor, Berry et al 1 ..... dry
8-15- 8 Stedham, R. F. Ray et al 1 .. dry
4-11-19 Finkles, Prod. & Ref. Corp. 1. dry

Wells completed 16
Production 65
Dry 10
Gas 3
Gas production 9,159,238

OKFUSKEE COUNTY

21-12-11 Wilson, Shelden & Staples 1.. 490
22-12-11 Wilson, Sunray Oil Corp. 2.... 15
36-11- 9 Wind, the Prairie O. & G. Co. 3 gas
23-11-11 Likowski, Summitt Drlg. Co. 1-A 10
36-12-10 Mackey, Atlantic O. P. Co. 2.. 100
13-10-11 Fields, Atlantic O. P. Co. 2 ... 40
3-11-12 Calloway, Kessler Pet. Co. 1-A dry

Wells completed 7
Production 565
Dry 1
Gas 1
Gas production 5,000,000

OKLAHOMA COUNTY

35-13-3w Johnson, Magnolia Pet. Co. et al 1 ..... dry
36-12-3w Traders, Phillips Pet. Co. 1.. 758
13-12-1w Cornwell, Mid-Kansas O. & G. Co. 1 ..... dry
1-11-3w Pest House, Anderson & Prichard 1 11473
Theimer, I. T. I. O. Co. 6 1993
1-11-3w Baker, T. B. Slick et al 3....5536
2-11-3w Holder, Marco Oil Co. 1 3800
Dillon, Skelly Oil Co. 2 8810
Storie, T. B. Slick Oil Co. et al 1 12096
Theimer, Wirt Franklin Pet. Corp. 8 12981
10-11-3w Ainsworth, Skelly Oil Co. et al 1 3760
Ainsworth, Skelly Oil Co. et al 2 4530
Ainsworth, Skelly Oil Co. et al 3 2665
Ainsworth, Skelly Oil Co. et al 4 6480
Frost Heights, Thomas B. Slick Oil Co. 4 5100
11-11-3w Eacock, I. T. I. Oil Co. 1 2106
Eacock, I. T. I. Oil Co. 2 3073
Handl, I. T. I. Oil Co. 1 2722
Trosper-Hughes, I. T. I. Oil Co. 1 10582
Dennis, Thomas B. Slick Oil Co. et al 1 7328
13-11-3w Trosper Park, Cromwell-Franklin Oil Co. 21 24516
14-11-2w Carrico, I. T. I. Oil Co. 2 4928
23-11-3w Unsell, I. T. I. Oil Co. 6.....3666
25-11-3w Clauer, Coline Oil Co. 13 1005
Clauer, Coline Oil Co. 15 4211
Peterson, I. T. I. Oil Co. 7 ..6021
36-11-2w Oklahoma State, I. T. I. Oil Co. 1 6330
19-11-2w Farley, I. T. I. Oil Co. 4 13119
32-11-2w Prairie O. & G. Co., Phillips Pet. et al 5.....4240
1-11-3w Hasting, Reynolds et al 1 ..18555
2-11-3w Theimer, Wirt Franklin Pet. Corp. 7 5919
Gibbons, Anderson & Prichard 2 ..... gas
10-11-3w Frost Heights, Thomas B. Slick Oil Co. 1 4630
Holmes, Hall & Briscoe 3....12927
Hatcher, Independent O. & G. and Sinclair O. & G. 1....5339
11-11-3w Hammer, I. T. I. Oil Co. 1 ...1754
14-11-3w Pasadena Heights, I. T. I. Oil Co. 2 5508
14-11-3w Page, Thomas B. Slick Oil Co. 2 4624
25-11-3w Clauer, Coline Oil Co. 7 1225
Peterson, I. T. I. Oil Co. 6..12740
36-11-3w School land No. 67, Sinclair O. & G. Co. 4 ..... dry
31-11-2w Venci, Sinclair O. & G. Co. 10.25750
12-12-3w Lincoln Park, Cromwell-Franklin Oil Co. 1 ..... dry
1-11-3w Atkinson, Thomas B. Slick Oil Co. et al 1 13655
2-11-3w Dougherty, Thomas B. Slick Oil Co. 1 3272
Alexander, Thomas B. Slick Oil Co. et al 1 11484
Danruther, Thomas B. Slick Oil Co. et al 2 1863
Trumbley, Thomas B. Slick Oil Co. et al 1 ..... gas
Theimer, Wirt Franklin Pet. Corp. 11 ..... gas
10-11-3w Frost Heights, Thomas B. Slick Oil Co. 2 3695
11-11-3w Coppinger, I. T. I. Oil Co. et al 5 3938
Starkey, I. T. I. Oil Co. 1....1475
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 25 13500
13-11-3w Trosper Park, Cromwell-Franklin Oil Co. 22 10011
14-11-3w Shepherd, Julian Oil Royalty Co. 1 4364
Hauser, Julian Oil Royalty Co. 1 3191
Habegger, I. T. I. Oil Co. et al 2 5362
23-11-3w Capshaw, I. T. I. Oil Co. 1....1222
35-12-3w Page, Wirt Franklin Pet. Corp. 2 5713
1-11-3w H. W. Jones, I. T. I. Oil Co. 2 18069
Sullivan, Jones Drlg. Co. 1..13061
2-11-3w McCulip, Champlin O. & R. Co. 1 6986
Classen, Thomas B. Slick Oil Co. 2 22370
11-11-3w C. E. Trosper, I. T. I. Oil Co. 1 4610
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 27 14799
14-11-3w Spillman, I. T. I. Oil Co. 4...10307
25-11-3w Clauer, Coline Oil Co. 16 903
Johnson, I. T. I. Oil Co. 8 882
31-11-2w Venci, Sinclair O. & G. Co. 15.39777
Venci, Sinclair O. & G. Co. 16.39293
32-11-2w Sigmon, the Prairie, Slick and Phillips Pet. 2 15400
Sigmon, the Prairie, Slick and Phillips Pet. 3 12408
1-11-3w H. W. Jones, I. T. I. Oil Co. 4.4400
1-11-3w Gleason, Thomas B. Slick Oil Co. 1 4802
2-11-3w Naden, Champlin O. & R. Co. 1 3945
Moore, Thomas B. Slick Oil Co. 1 1538
Alexander, Thomas B. Slick Oil Co. 2 2525
Danruther, Thomas B. Slick Oil Co. et al 3 3450
Miller, Thomas B. Slick Oil Co. et al 1 3165
Holder, Wirt Franklin Pet. Corp. 2 3990
Theimer, Wirt Franklin Pet. Corp. 10 2575
Theimer, Wirt Franklin Pet. Corp. 13 4340
11-11-3w Coppinger, I. T. I. Oil Co. 2..1245
Corff, I. T. I. Oil Co. 4 2195
Corff, I. T. I. Oil Co. 5 5700
Hammer, I. T. I. Oil Co. 2 ..4925
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 24 7495
Lowery, Wirt Franklin Pet. Corp. 9 9475
13-11-3w Trosper Park, Cromwell-Franklin Oil Co. 16 1310
14-11-3w Magnolia Heights, I. T. I. Oil Co. 1 4221
15-11-3w Lindsey, Hall & Briscoe 2 ...7023
Vernon Heights, I. T. I. Oil Co. 1 1375
Phelan Heights, I. T. I. Oil Co. 1 2265
23-11-3w Moliman, Mid-Kansas O. & G. Co. 4 1627
25-11-3w Johnson, I. T. I. Oil Co. 6....3494
36-11-3w Oklahoma State, I. T. I. Oil Co. 5 5262
31-11-2w Jones, I. T. I. Oil Co. et al 12 5810
Sudik, I. T. I. Oil Co. 10 23900
Venci, Sinclair O. & G. Co. 6.4940

Wells completed 99
Production 681,441
Dry 4
Gas 3
Gas production 249,500,000

OKMULGEE COUNTY

31-15-13 Perryman, Logan et al 2-A.... gas
35-14-14 Anderson, Burns et al 17..... 2
32-15-14 Roberts, Berry & Piatt et al 1-A ..... dry
14-14-14 Colbert, Misner et al 2 20
20-12-13 Burgess, Rossiter Oil Co. 4.... gas
21-12-14 Smith, Sims Oil Co. et al 3.... gas
5-13-14 Grayson, A. McInturff 1-A .... gas

Wells completed 7
Production 22
Dry 1
Gas 4
Gas production 11,250,000

OSAGE COUNTY

34-25- 9 Link Oil Co. 7 ..... dry
23-27-11 Empire O. & R. Co. 3 ..... dry
32-24- 9 I. T. I. Oil Co. 435 ..... gas
28-23- 6 Western American Oil Co. 1.. dry
11-21- 8 Turman Oil Co. 3 410
25-21-11 Travis and Devonian Oil Co. 4 18
10-21-12 Sinclair O. & G. Co. 253 2
16-21- 9 Clint Moore Estate et al 9.... dry
29-21-11 Hill Drlg. Co. and Devonian Oil Co. 2 ..... dry
19-25- 8 Atlantic O. P. Co. 7 ..... dry
28-25- 9 Carter Oil Co. 12 ..... dry
15-24- 8 McCune, Wormser et al 14 20
35-24- 8 Sidwell Drlg. Co. 2 5
20-29- 9 Winona Oil Co. 17 15
14-21- 8 Pueblo Pet. Co. 2 125
Stanley et al 3 50
8-20-12 F. A. Gillespie & Sons 18 10

Wells completed 17
Production 655
Dry 7
Gas 1
Gas production 2,500,000

PAWNEE COUNTY

25-20-9 Smelzer, Swift et al 7 12
1-20-7 Lauderdale, Selby O. & G. Co. 1 1
30-21-9 Edmiston, Geraldine Oil Co. 8.. 5
23-20-7 Fee, Pawnee O. & P. Co. 1-A.. dry
8-20-8 Wrightsman, Wasson et al 1-A.. dry
6-20-8 Lucas, Cy Marshall et al 12 .. dry
14-20-9 McCollum, Glass et al 1 ..... gas

Wells completed 7
Production 18
Dry 2
Gas 1
Gas production 1,800,000

PAYNE COUNTY

6-17-4 Payne, Magnolia Pet. Co. 3.. dry
9-18-5 Harris, Deep Rock Oil Corp. 1 gas
5-17-4 Sharrum, Mulberry Oil Co. 7.. 800
6-17-4 Payne, Magnolia Pet. Co. 7.... 75

13-19-1w Edwards, Gardner Pet. Co. et al 1 ..... dry

Wells completed 5
Production 875
Dry 2
Gas 1
Gas production 12,000,000

PONTOTOC COUNTY

31-5-5 Stafford, Benedum-Trees Oil Co. 2 70
10-5-5 Hatcher, Texas Pacific C. & O. Co. 4 5
12-5-5 Allen, Dixie Oil Co. 1 20
5-4-5 Hightower, Reiter-Foster Oil Corp. 1 ..... dry

Wells completed 4
Production 95
Dry 1

POTTAWATOMIE COUNTY

12-6-3 Miller, Transcontinental Oil Co. 2 dry
13-6-3 Gregg, I. T. I. Oil Co. 1 279
Warren, Wilcox O. & G. Co. 4.. 580
8-9-5 Townsite, Lombard & Hart 1 .. dry
7-9-5 Alfrey, Empire O. & R. Co. 1.. dry
8-9-5 Townsite, Standard Drlg. Co. 1.. 70
Townsite, Obermeyer & King 1.. 450
Townsite, McEwen & Walker 1.. dry
Townsite, Gwin Drlg. Co. 1 315
13-6-3 Gregg, Gwin Drlg. Co. 1 250
16-6-4 Marshall, Deep Rock Oil Corp. 1 dry

Wells completed 11
Production 1944
Dry 5

SEMINOLE COUNTY

12- 9-5 Anderson, Eason Oil Co. 2 475
Grounds, Magnolia Pet. Co. 3.. 347
10- 6-6 Harjo, Barnsdall Oil Co. 2 224
11-10-5 Bruner, Lippa Drlg. Co. 1 .... dry
13- 7-6 Cotcha, Gypsy Oil Co. 19 1245
10- 6-6 Cheparney, Pine et al 3 1270
Chupco, Hilton Phillips et al 3 565
19- 6-6 Burgess, Hilton Phillips et al 4.1340
23- 9-5 Grounds, Magnolia Pet. Co. 4.. dry
15- 9-5 Superior Oil Corp. and Darby Pet. 2 ..... dry
30- 9-6 Campbell, Carter Oil Co. 6 686
4- 8-8 Gilbray, Watt et al 1 ..... dry
10- 8-8 Douglas, Deep Rock Oil Corp. 1. 143
12- 7-5 Ashby, Pure Oil Co. 1 118
5- 7-7 Payne, Gypsy Oil Co. 10 120
19- 7-8 Eliza, The Texas Company 1.. gas
19- 6-6 Billington, Magnolia Pet. Co. 1.1050
7- 5-8 Harjo, Producers & Refiners Corp. 2 290
12- 5-7 Diana, The Texas Company 2.. dry
18- 5-8 Nitchey, Burke-Greis Oil Co. 6.. dry
12- 9-6 Killing, Carter Oil Co. 13 ..... dry
29- 9-6 Chase, Amerada Pet. Corp. and Dixie Oil 1 3680
15- 9-6 Cudjo "B," Sinclair O. & G. Co. 5 ..... dry

Wells completed 23
Production 11,652
Dry 8
Gas 1
Gas production 30,000,000

STEPHENS COUNTY

12-1s-4w Crews, Magnolia Pet. Co. 1.. 20
15-2 -9w Burns, Meridian Gas Co. 1.... dry
17-2s-7w Dilly, Pace et al 1 ..... gas
18-2s-7w McDonald, Carter Oil Co. 1.... 12
11-2 -8w Frederick, Smythe et al 1.... dry
17-2s-7w Tony, Pace et al 1 ..... dry

Wells completed 6
Production 32
Dry 3
Gas 1
Gas production 2,000,000

WAGONER COUNTY

26-18-15 Drew, Martin et al 2 20
34-18-16 Childers, Bolley & Edwards 1 dry
11-19-15 Asbury, Martin et al 1 ..... dry
12-16-15 Barnett, Knox & Shouse 3 .... dry
18-16-15 Holden, Peterson & Young 2 .. dry
16-16-17 Verner, Cherokee Public Service Co. 2 15

Wells completed 6
Production 35
Dry 4

MISCELLANEOUS COUNTIES

Grady County—
30-4-7w White, Kahl et al 1 ..... gas
25-4-8w Miller, Nat. Gas Prod. Corp. 1. gas
Cotton County—
3-4s-13w McMillan, Shasta Oil Co. 1... dry
Garfield County—
32-23-4w Loomis, Shell Pet. Corp. 1 .... dry
10-20-4w Meisner, Continental Oil Co. 1 380
4-21-3w Clark, U. S. Royalty Corp. of America 2 15
Haskell County—
3-9-18 Phillips, Holden et al 2 ..... dry
10-9-18 Sanders, Marion Oil Co. 1 .... dry
Kay County—
31-27-2 Garrett, Martin et al 1 ..... dry
11-27-3 Simmonds, McFarland et al 8.. dry
Hughes County—
11-7-8 Proctor, Clark & Cowden 1 .... gas
Latimer County—
8-6-22 Ferran, LeFlore O. & G. Co. RO-18 ..... gas
Grant County—
23-27-3w Crouch, Argo Oil Co. 3 ..... dry
Crouch, Argo Oil Co. 5 ..... dry
McIntosh County—
34-12-14 Williams, Deep Fork Oil Co. 1 gas
34-12-14 Rentie, Depe Fork Oil Co. 1.. gas
Rentie, Deep Fork Oil Co. 1.. gas
Noble County—
1-22-2w White, K. D. Oil Co. 4 ..... dry
Nowata County—
2-25-16 Brungarner, the Prairie O. & G. Co. 12 ..... gas
Washington County—
16-28-13 Bailey, Dewey Portland Cement Co. 1 ..... gas
Pittsburg County—
4-7-18 Dyer, Midwestern O. & G. Co. 1 gas
9-7-18 School lot, Choctaw Gas Co. 1 gas
15-7-18 Riddel, Central States Power & Light Co. 1 ..... gas
Texas County—
23-6-14ecm Ralston, Argus Prod. Co. 1 gas
Tulsa County—
21-19-11 Marley, Jackson et al 1 10
32-17-14 Allen, Downing et al 1-A 5
Woodward County—
15-21-19w Marklin, Burgoyne Bros. 1.. dry

Wells completed 27
Production 410
Dry 10
Gas 13
Gas production 123,125,000

KANSAS FIELDS

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barber	0	5	5
Barton	1	2	3
Butler	1	11	12
Chautauqua	0	2	2
Clark	0	1	1
Clay	0	1	1
Coffey	0	4	4
Cowley	2	9	11
Dickinson	0	2	2
Douglas	0	1	1
Edwards	0	2	2
Elk	0	4	4
Ellis	0	7	7
Ellsworth	2	1	3
Ford	0	2	2
Franklin	0	1	1
Geary	0	1	1
Greenwood	3	21	24
Gove	0	2	2
Graham	0	2	2
Grant	0	1	1
Harper	0	2	2
Harvey	0	2	2
Kingman	1	2	3
Kiowa	0	2	2
Lyons	0	1	1
McPherson	1	12	13
Marion	0	4	4
Morris	2	1	3
Morton	0	1	1
Norton	1	0	1
Osage	0	1	1
Pawnee	0	1	1
Pratt	0	1	1
Reno	0	5	5
Rice	1	14	15
Rooks	0	2	2
Rush	0	3	3
Russell	1	6	7
Saline	0	1	1
Sedgwick	9	24	33
Sheridan	0	1	1
Stafford	0	2	2
Stanton	0	1	1
Stevens	2	35	37
Sumner	2	4	6
Trego	0	1	1
Washington	0	1	1
Woodson	1	3	4
Total September	30	215	245
Total August	52	203	255
Difference	22	12	10

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	10	1,270	2	8
Cowley	9	1,153	2	2
Greenwood	14	1,180	7	1
McPherson	6	2,747	3	0
Morton	11	0	0	11
Rice	8	1,123	5	6
Sedgwick	9	3,374	3	0
Stevens	18	0	0	18
Miscellaneous	32	952	22	8
Total September ..	117	11,799	46	35
Total August	101	16,404	35	27
Difference	16	4,605	11	8

WELLS COMPLETED

BUTLER COUNTY

6-27-4 Corbin, Tidal Oil Co. 1 800
28-27-6 Stern, Johnson et al 1 40
33-26-4 Crist, Pioneer Pet. Co. 1 ..... dry
10-26-6 Mackerel, Callahan & Lassen 1 dry
29-26-7 Gunther, Liggett et al 1 70
20-26-5 Koogler, Empire O. & R. Co. 101 55
22-27-5 Brandenberger "A," Empire O. & R. Co. 9 175
14-27-7 Seward, Aladdin Pet. and Phillips Pet. Co. 1 30
20-26-5 Koogler, Empire O. & R. Co. 102 100
24-28-5 Hedderman, National Ref. Co. 1 dry

Wells completed 10
Production 1270
Dry 3

COWLEY COUNTY

12-32-6 Estes, Trees Oil Co. 3 ..... gas
19-32-8 Adams, Roth & Farout 1 ..... gas
20-31-6 Headley, Pryor & Lockhart and Johnson 1 100
29-31-6 Sitton, Pryor & Lockhart and Sutton 1 500
30-31-6 Orr, Lewis Oil Co. et al 1 400
33-32-7 Countryman, the Prairie O. & G. Co. 2 108
28-33-3 Johnson "C," McKnabb et al 1 45
17-31-6 Semans, Mission Oil Co. 1 .... dry
28-33-3 Johnson "C," McKnabb et al 2.. dry

Wells completed 9
Production 1153
Dry 2
Gas 2
Gas production 2,500,000

GREENWOOD COUNTY

26-24-10 Jones, Aladdin Pet. Co. 4 .... dry
7-24-12 Thrall, Tulsa Oil Co. 1 50
36-24-10 Mack "B," McGinnis et al 6.. dry
33-25-13 Geist, Mid-Continent Pet. Co. 1 dry
19-22-11 Greenwood "B," Simmons et al 1 ..... dry
27-23-11 Winegar, Simmons et al 3 .... dry
1-24-11 Newhouse, Prairie O. & G. Co. 7 259
25-24-12 Beavers "C," Derby Oil Co. 1 gas
18-26- 9 Stanhope, Kansan Oil Corp. 1 dry
19-22-11 Greenwood, Simmons et al 3.. 750
19-22-11 Greenwood, Empire O. & R. Co. 3 10
6-24-12 Beauchat, Tulsa Oil Co. 2 20
Shook, Syndicate O. & G. Co. 6 100
12-27- 9 Denchfield, Morrowery et al 1 dry

Wells completed 14
Production 1180
Dry 7
Gas 1
Gas production 1,500,000

McPHERSON COUNTY

15-18-1w Bishop, Darby Pet. Co. and Shell Pet. 1 ..... dry
33-20-3w Stuckey, Gypsy Oil Co. 1..... 520
33-20-3w McCurdy, Sinclair O. & G. Co. 5 1270
34-20-3w Kinney, Gypsy Oil Co. 4 957
34-20-3w Kinney, Gypsy Oil Co. 1 .... dry
36-20-2w Becker, W. C. McBride, Inc. 1 dry

Wells completed 6
Production 2747
Dry 3

MORTON COUNTY

5-35-39w Rickerts, McNabb et al 1... gas
4-34-39w Mangel, Argus Prod. Co. 2... gas
9-34-39w Dreibelbis, Argus Prod. Co. 1 gas
18-34-39w Thompson, Argus Prod. Co. 1 gas
4-33-39w Mangel, Argus Prod. Co. 1 .. gas
18-33-39w Garner, Argus Prod. Co. 1.... gas
9-34-39w Dreibelbis, Argus Prod. Co. 2 gas
21-34-39w Tillett, Argus Prod. Co. 1.... gas
27-34-40w Watson, Argus Prod. Co. 1.. gas
28-34-39w H. Erhardt, Argus Prod. Co. 1 ..... gas
29-34-39w Sullivan, Argus Prod. Co. 1.. gas

Wells completed 11
Gas 11
Gas production 74,967,627

RICE COUNTY

33-18- 9w Ploog, Tatlock and Shell Pet. et al 1 723
29-18- 6w Jennings, McPherson O. & G. Co. et al 1 ..... dry
14-20-10w Schwartz, Miller & Brown et al 1 ..... dry
33-19- 6w Sledd Farm Corp., Lee & Shell Pet. 1 ..... dry
27-20-10w Groves, Braden & McClure et al 1 ..... dry
Snyder, Robertson et al 1... dry
21-20-10w West, The Texas Co. 1 400
28-20- 1w Buchart, Aladdin Pet. Co. 1 dry

Wells completed 8
Production 1123
Dry 6

SEDGWICK COUNTY

30-27-2 Keys, Vickers Pet. Co. 2 271
6-26-1 Gorham, Derby Oil Co. 3 .... dry
15-27-2 Johndro, Deal et al 1 60
30-27-2 Mackey, Producers & Refiners Corp. 1 38
4-25-1w Loper, Liggett et al 1 ..... dry
19-27-2 Trustee, Fisher & Lauck 3 ..1000
30-27-2 Shaffer, Fisher & Lauck 1 .. 404
18-26-1 Anderson, Magnolia Pet. Co. 1 dry
30-27-2 Rimel, Derby Oil Co. 1 1601

Wells completed 9
Production 3374
Dry 3

STEVENS COUNTY

3-35-38w Brecheisen, Trees Oil Co. 1.. gas
3-33-39w Stone, Argus Prod. Co. 1.. gas
17-33-38w Wagoner, Argus Prod. Co. 1.. gas
22-31-38w Persinger, Harbendorf et al 1 ..... gas
19-33-38w Gregory, Missouri-Kansas Gas Co. et al 1 ..... gas
32-33-37w Crawford, Missouri-Kansas Gas Co. et al 1 ..... gas
2-34-39w Sibon, Argus Prod. Co. 1 .... gas
15-34-39w Fee, Argus Prod. Co. 1 .... gas
6-35-38w Schaffer, Argus Prod. Co. 1 gas
2-35-39w Kraemer, Argus Prod. Co. 1 gas
13-35-39w Johnson, Argus Prod. Co. 1 gas
31-34-38w West, Argus Prod. Co. 1 .... gas
26-34-39w Hershey, Argus Prod. Co. 1.. gas
27-34-37w Kneir, Argus Prod. Co. 1.... gas
30-34-37w Harrison, Argus Prod. Co. 1 gas
11-35-39w Erhardt, Argus Prod. Co. 1.. gas
10-35-37w Irwin, Argus Prod. Co. 1.... gas
18-35-37w Mitchell, Argus Prod. Co. 1 gas

Wells completed 18
Gas 18
Gas production 122,683,550

MISCELLANEOUS COUNTIES

Chase County—
36-22-9 Leidy, Polhamus et al 4 20
23-22-9 Crosby, Empire O. & R. Co. et al 1 ..... dry
Coffey County—
2-23-15 Barngrover, Linn O. & G. Co. 3 35
13-23-14 Scott, Hoyt et al 2 ..... dry
36-22-13 Assenmacher, Ritchey et al 1.. dry
Chautauqua County—
17-32-11 Cunningham, Prairie O. & G. Co. 1 ..... dry
Ellis County—
4-11-20w Fisher, Byrens et al 1 ..... dry
Elk County—
34-29-10 Dinkleberger, Aladdin Pet. Co. et al 1 ..... dry
Barton County—
11-16-13w Rude, Prairie O. & G. Co. 1.. dry
Marion County—
20-20-2 Heibert, Empire O. & R. Co. 1.. dry
17-21-4 Reamey, National Ref. Co. 17.. 180
15-20-5 Robinson, Palmer & Wixon 1 .. gas
Morris County—
14-17-7 Swan, General Utilities Co. 1.. gas
6-16-6 Scott, Urshell et al 1 ..... dry
Pawnee County—
30-21-17w Welch, Amerada Pet. Corp. 1 dry
34-23-17w Millhouse, Skelly Oil Co. 1.. dry
Rooks County—
12-9-16w Stites, Krueger et al 1 ..... dry
Rush County—
26-17-17w Neve, Danciger O. & R. Co. et al 1 ..... dry
Russell County—
23-15-14w Ochs, Empire O. & R. Co. et al 2 215
26-14-14w Herbel, Empire O. & R. Co. 1 dry
6-13-15 I. Leonard, The Texas Co. 2.. dry
4-14-15w Witt, Mid-West Exploration Co. 33 ..... dry
6-15-14w Mitchell, Stearns & Streeter 1 ..... dry
Sumner County—
29-31-1w Neal, Sunray Oil Co. 1 117
15-35-2 Herrick, Prairie O. & G. Co. 1 300
25-31-2 Herrick, W. K. Mann et al 1.. 55
23-34-2w Sturm, Gypsy Oil Co. 1 ..... dry
Woodson County—
25-23-13 Dyer, Lewis et al 1 ..... dry
26-23-14 Reed, Sheedy et al 1 ..... dry
14-26-13 Wilhite, Henderson et al 2 .. gas
29-24-14 Lawton, Empire O. & R. Co. and Skelly Oil 1 ..... dry
Stafford County—
22-22-11w Leydig, Boucher et al 1 .... dry

Wells completed 32
Production 952
Dry 22
Gas 3
Gas production 2,250,000

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	13	35	10	0
Brown	10	25	9	0
Callahan	5	20	3	0
Clay	3	70	1	0
Coleman	15	34	10	2
Comanche	4	20	1	1
Cooke	8	204	4	0
Eastland	9	417	8	0
Grayson	1	0	1	0
Johnson	1	0	1	0
Jack	1	80	0	0
Montague	3	0	3	0
Palo Pinto	4	0	2	2
Shackelford	4	0	4	0
Stephens	4	50	1	3
Throckmorton	1	0	1	0
Wichita	8	120	4	0
Wilbarger	2	35	1	0
Young	60	2,242	40	0
Total September	156	3,352	102	7
Total August	277	7,411	173	11
Difference	121	4,059	71	5

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	11	19	8	38
Brown	0	3	6	9
Callahan	1	1	5	7
Coleman	1	5	16	22
Cooke	1	3	9	13
Clay	0	1	4	5
Eastland	3	8	10	20
Erath	0	2	5	7
Jack	0	1	5	6
Montague	0	2	5	7
Palo Pinto	5	8	5	18
Shackelford	0	3	7	10
Stephens	1	2	9	12
Throckmorton	3	5	2	10
Wichita	0	4	6	10
Wilbarger	0	12	4	16
Young	17	19	37	73
Miscellaneous counties ..	2	23	6	31
Total September	48	121	146	316
Total August	53	128	167	348
Difference	5	7	21	33

WELLS COMPLETED

ARCHER COUNTY

Thomas, Holbrook & Woods 1 5
Morrison, E. S. Bell 1 ..... dry
Duckworth et ux, Panhandle Ref. Co. 1 dry
Coleman, Joe Minton et al 1 ..... dry
Green-B, Bridwell Oil Co. 1 13
Webb, R. J. Brown 1 ..... dry
Hayter, Elizey & Crowell 1 ..... dry
Morehead est., King & Hays 1 ..... dry
Lauster, S. Kruger et al 2 18
Richardson, C. E. Litchfield 1 ..... dry
Webb, Hedrick-Camp Drlg. Co. 1 .... dry
Richardson, Junker & Perkins 1 ..... dry
Andrews, Silk & Chenault 1 ..... dry

Wells completed 13
Production 35
Dry holes 10

BROWN COUNTY

Loyd, Owens et al 1 ..... dry
Martin et al-B, Tex-Cal Oil Co. 5 ... dry
Perry, Ven Mex Oil Co. of Texas 1... dry
Hunter, Drake et al 1 ..... dry
Armstrong, Humble O. & R. Co. 24 25
T. B. Busbee, McCarter et al 2 ..... dry
C. T. Evans, Phillips, Samuels & Van Bibber 1 ..... dry
F. W. Curry, Preston et al 1 ..... dry
Edmondson, H. H. Simons 1 ..... dry
Kilgore, Young Bros. & Alexander 3.. dry

Wells completed 10
Production 35
Dry holes 9

CALLAHAN COUNTY

Seale est., Thompson et al 1 ..... dry
Hall, Wakefield et al 1 ..... dry
Finley-A, Star Drlg. Co. et al 1 5
Jackson-D, Beams et al 2 15
W. T. Wheeler, Perry et al 1 ..... dry

Wells completed 5
Production 20
Dry holes 3

CLAY COUNTY

Boddy, Mid-Continent Hold. Corp. 1.. dry
Stine et al-A, Mid-Continent Hold. Corp. 6 40
J. D. Stine et al-A, Mid-Continent Hold. Corp. 7 30

Wells completed 3
Production 70
Dry holes 1

COLEMAN COUNTY

McCulloch, Atlantic O. P. Co. et al 1... dry

Switzer, Coleman Gas & Oil Co. 1 .... gas
McCulloch, Meredith & Benton 2 20
Rogers, Urban et al 1 ..... dry
Rehm, Elmore et al 1 ..... dry
Shore, McGahhey et al 1 ..... dry
Golson, Arcadia Ref. Co. et al 1 323
Martin, Shields-Pierce et al 1 ..... dry
Barker, Breeding et al 1 ..... dry
J. P. Morris, Mitchell & Groves Unit Operation 1 ..... dry
Evans, Farrell et al 1 ..... dry
J. W. Wells, Jake L. Hamon 1 ..... gas
Beck, Hix et al 1 ..... dry
H. W. Kingsberry, Jamison, Pollard & Forster 1 14
McClatchey-A, Windsor et al 1 ..... dry

Wells completed 15
Production 34
Dry holes 10
Gas wells 2
Gas production 2,780,000

COMANCHE COUNTY

J. R. Perry, Straub Oil Co. 2 5
Poteet, Corvette Oil Corp. 4 15
Dunn, Lone Star Gas Co. 1 ..... gas
E. A. Whitesides, J. E. Whitesides 1.. dry

Wells completed 4
Production 20
Dry holes 1
Gas wells 1
Gas production 4,252,000

COOKE COUNTY

Field & Bowers, Danciger Oil & Ref. Co. 1 ..... dry
Fleitman-B, Danciger Oil & Ref. Co. 1 dry
Chaffin, Fain-McGaha Oil Corp. 4 18
Robison, Russell & Monroe 1 ..... dry
Dennis-B, A. V. Grant et al 1 78
Huggins, The Texas Company and Monroe 1 ..... dry
Hess, Hoffer Oil Corp. 1 8
Lawson, Deep Rock Oil Co. of Tulsa 1 100

Wells completed 3
Production 204
Dry holes 4

EASTLAND COUNTY

Butler, T. P. Coal & Oil Co. 29 (temp. abandoned location) ..... dry
Patterson, Hyer et al 1 2
O. E. Lyerla, Hoffman & Page Co. 8.. 15
Terry, Hickory Oil & Gas Co. 1 400
Westlenhoim, Texas Dev. Co. 2 ..... dry
Exall, McLester Oil Co. et al 1 ..... dry
Lewis heirs, Hopkins et al 1 ..... dry
Busan heirs, Lobaugh & Holden 1 .... dry
Sneed, Matthews, trustee, 1 ..... dry

Wells completed 9
Production 417
Dry holes 6
Gas production 4,800,000

GRAYSON COUNTY

Handy & M.&P. Bank, Tucker & Rosson 1 ..... dry

JOHNSON COUNTY

Wilkinson, T. G. Shaw Oil Corp. 1.... dry

JACK COUNTY

Enlow, Republic Prod. Co. 1-A 80

MONTAGUE COUNTY

Reed, A. Tubbs et al 1 ..... dry
Bouldin, Bridwell Oil Co. 1 ..... dry
Howard, United Prod. & Pet. Prod. Co. 1 ..... dry

Wells completed 3
Dry holes 3

PALO PINTO COUNTY

Jones, O'Neil 1 (location temporarily abandoned) ..... dry
Watson, Lone Star Gas Co. 1 ..... gas
Ringa, Wickens et al 1 ..... dry
T. P. Coal & Oil Co., T. P. Coal & Oil Co. 2 ..... gas

Wells completed 4
Dry holes 2
Gas wells 2
Gas production 3,580,000

SHACKELFORD COUNTY

Bouldin, Kouri et al 1 ..... dry
Nail, G. P. Mitcham 2 ..... dry
B. S. Walker, Beatty et al 1 ..... dry
Mathews-B, The Texas Company 1 ... dry

Wells completed 4
Dry holes 4

STEPHENS COUNTY

Tomlin, Lone Star Gas Co. 1 ..... gas
E. G. Moore, Alworth et al 1 (second completion) ..... gas
T. A. Flournoy, J. R. Eidson 1 ..... dry
Parks-A, The Texas Company 42 50

Wells completed 4
Production 50
Dry holes 1
Gas wells 2
Gas production 19,250,000

THROCKMORTON COUNTY

J. A. Matthews, Gulf Prod. Co. 2 ..... dry

WICHITA COUNTY

Cabe, R. R. Clark et al 1 ..... dry
Kemp & Kempner-A, Arkansas Fuel Oil Co. 32 5
Honaker, Frank Baldwin 1 ..... dry
Honaker, John O'Neil 2 6
Kemp & Kempner-A, Arkansas Fuel Oil Co. 39 63
Douglas Prod. Co., Douglas Prod. Co. 2 dry
Honaker, John O'Neil 4 ..... dry
Honaker, Schlaffke & Blair 2 46

Wells completed 3
Production 120
Dry holes 4

WILBARGER COUNTY

Waggoner-B, Lewis Prod. Co. 10 ..... dry
Waggoner-B, Lewis Prod. Co. 11 35

Wells completed 2
Production 35
Dry holes 1

YOUNG COUNTY

Jeffery, George A. Alexander 1 ..... dry
Finch, F. E. Butler et al 1 34
Stewart, Cunningham & Lynch 1 ..... dry
Trueheart, Disney & Murrell 1 ..... dry
Farrow, C. H. Hebrig 1 ..... dry
Farmer, C. W. Josey et al 1 ..... dry
Jeffery, McKanna & The Texas Co. 1... 34
Stewart Salter, McMeans & Williams 1 dry
Orr, Parks & Stastny 1 ..... dry
Larimore et ux, Westheimer & Daube 9 168
Bullock, C. C. Williams 1 ..... dry
Duckworth, Williams & Baker 1 ..... dry
Remington, Young Bros. & Alexander 6 300
Larimore, Young Bros. & Terrell 3 ... dry
Davis est., Ewing et al 1 ..... dry
J. Kisinger, Fultz & Kay 3 30
Haggard, Gray & Slick 1 ..... dry
Morrison, Pandem and Jacob Oil & Gas Co. 1 ..... dry
Greet et al, J. K. Deats 1 ..... dry
Belknap Coal Co., W. R. Fullerton 2.. dry
Jeffery, Heydrick and The Texas Co. 1 dry
Furr et al, McDonald & Campbell 1... dry
Watson, Panhandle Ref. Co. 4 30
Watson, Panhandle Ref. Co. 5 18
Neeley, Wm. Shriver 1 ..... dry
Reynolds, H. F. Smith et al 1 ..... dry
Hearne, A. H. Stolz 1 ..... dry
Larimore et ux, Westheimer & Daube 10 50
Furr et al, C. C. Williams 1 ..... dry
Deitrich, Akin & Rayzor 1 20
Terrell est., Ard & Son 2 ..... dry
Jeffery-B, Arkansas Fuel Oil Co. 1 ... dry
True School District 38, W. P. Chancellor 1 ..... dry
Kilcrease, George B. Chandler 1 ..... dry
Brooks, Jack Harris 1 ..... dry
Bloodworth-A, T. F. Hunter et al 4... 10
Bloodworth-B, T. F. Hunter et al 3... 30
Graham, King Royalty Co. and Bullington 5 200
Graham, Pet. Producers Co. 1 160
Finch et al, Roy Seitz 1 55
Bloodworth, Staley-Wynn & Kruger 2 28
Jack Rux (J. Sosteric), Willis & Terrell 1 ..... dry
Jordan, Wootten & Reed 2 ..... dry
Hinson, Bradstreet et al 1 ..... dry
State Land, Long et al 2 500
Railroad right of way, Moncrief et al 1 dry
McCluskey, Producers Supply & Tool Co. 7 5
Robertson, Slick & Knox 1 50
Marrs, Gilliland & Rosser 1 ..... dry
C. P. Morgan, P. B. Goodwin 1 ..... dry
Bullock et al, W. H. Hammon 1 ..... dry
Larimore, Independent O. & G. Co. 13 400
Larimore, Julian Oil and Stripling 9.. dry
Bishop, S. G. McClintock 1 ..... dry
Kasterson, McKanna and The Texas Co. 1 ..... dry
Groves, Painter & Knox 1 ..... dry
Watson, Panhandle Ref. Co. 6 70
Rux, Willis & Terrell 2 ..... dry
Robinson, Wootten & Reed 1 ..... dry
Hinson, Bradstreet et al 1 ..... dry

Wells completed 60
Production 3242
Dry holes 40
Gas production 250,000

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Andrews	1	0	1	0
Crane	5	1,376	0	0
Crockett	2	0	2	0
Ector	15	4,014	4	0
Fisher	1	0	1	0
Garza	1	0	1	0
Howard	1	17	0	0
Hudspeth	1	0	1	0
Jones	1	0	1	0
Loving	4	904	1	0
Lynn	1	0	1	0
Menard	1	0	1	0
Mitchell	1	75	0	0
Pecos	11	17,609	2	0
Tom Green	1	0	1	0
Upton	1	210	0	0
Val Verde	1	0	1	0
Ward	3	28	1	0
Winkler	4	17,587	1	0
Total September	56	41,720	21	0
Total August	76	55,675	27	0
Difference	20	13,955	6	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Crane	1	0	10	11
Crockett	0	1	1	2
Ector	4	2	7	13
Fisher	0	1	1	2
Glasscock	0	2	1	3
Howard	4	8	5	17
Irion	1	6	1	8
Jones	0	1	1	2
Pecos	8	9	16	33
Reagan	0	0	6	6
Upton	1	1	3	5
Ward	0	1	10	11
Winkler	2	3	2	7
Miscellaneous counties	5	55	23	83
Total September	26	90	87	203
Total August	31	91	110	232
Difference	5	1	23	29

ANDREWS COUNTY

WELLS COMPLETED

H. M. Wilson, R. R. Penn et al 1..... dry

CRANE COUNTY

J. T. McElroy, Gulf Prod. Co. 81 40
J. T. McElroy, Gulf Prod. Co. 80 362
J. T. McElroy, Gulf Prod. Co. 82 185
University-Collett, Church & Fields 3.. 552
University-C, Tidal Oil Co. 3 237

Wells completed 5
Production 1376

CROCKETT COUNTY

A. C. Hoover, Magnolia Pet. Co. 1 ... dry
Paul Perner, Doleman & Moore 1 .... dry

ECTOR COUNTY

W. E. Connell-B, Tr.-A, Gulf Prod. Co. 2 235
M. Eidson, Independent O. & G. Co. et al (temporarily comp.) ..... dry
Kloh & Rumsey, R. R. Penn 1 ..... dry
Leon Goodman et al, R. R. Penn et al 1 ..... dry
B. W. McKenzie, T. P. Coal & Oil Co. (temporarily abandoned) ..... dry
State-A, Gulf Prod. Co. 5 660
E. J. Jones, Humble O. & R. Co. 1 ... 260
R. L. York, Humble O. & R. Co. et al 10 267
University-S, Landreth Prod. Corp. 5.. 327
University-T, Landreth Prod. Corp. 4.. 373
University-C, Skelly Oil Co. et al 1.... 471
University-B, Cosden Oil Co. 5 518
E. J. Jones, Sunray Oil Corp. and Llano Oil Co. 1 122
J. M. Cowden & Co., Southern Crude O. P. Co. 1 256

Wells completed 15
Production 4014
State, Gulf Prod. Co. 4 525
Dry holes 4

FISHER COUNTY

Teagarden-A, The Texas Company 1.. dry

GARZA COUNTY

K. Stoker, M. L. Richards 1 ..... dry

HOWARD COUNTY

H. R. Clay, Merrick & Lamb 15 17

HUDSPETH COUNTY

University, the California Co. 1 ..... dry

JONES COUNTY

Hudspeth, Gibson & Johnson, Inc. 1... dry

LOVING COUNTY

W. D. Johnson, Dixie Oil Co. and Phillips Pet. Co. 1 ..... dry
Wheat & Ramsey, L. E. Lockhart 2 .. 238
Reagan & McElvain, the California Co. 2 652
G. B. Russell, Henshaw et al 2 14

Wells completed 4
Production 904
Dry holes 1

LYNN COUNTY

C. O. Edwards, George McCamey et al 1 dry

MENARD COUNTY

Eckardt, Panhandle, Duffy et al 2 ... dry

MITCHELL COUNTY

E. Morrison, Lease 2, California Co. 19.. 75

PECOS COUNTY

University-A, Continental Oil Co. 8.... 100
J. S. Jackson (Pure), O. J. Perren 1.. 2
M. A. Smith et al (Tr.-A), Gulf Prod. Co. 26 15,840
I. G. Yates, Gulf Prod. Co. 33 928
Mrs. M. A. Smith-A, Simms Pet. Co. 7 192
E. J. Fromme, California Co. 1 ..... dry
J. H. Tippett (Kirby), Cardinal Oil Co. 4 175
University-I, Landreth Prod. Corp. et al 2 ..... dry
Mrs. M. A. Smith-A, Simms Pet. Co. 7 (second completion) 240
University-D, World Oil Co. 1 32
J. A. McDonald, Independent Oil & Gas Co. et al 4 ..... dry

Wells completed 11
Production 17,509
Dry holes 3
Gas production 1,500,000

TOM GREEN COUNTY

Lewis, Ellis et al 3 ..... dry

UPTON COUNTY

J. H. Shirk-B, Gulf Prod. Co. 1 210

VAL VERDE COUNTY

J. P. Yoas, A. Blum 1 ..... dry

WARD COUNTY

G. T. Clements, J. E. Smith 1 (temporarily completed) 8
Reynolds & Miller, Atlantic O. P. Co. 1 dry
M. B. Murry, Bradford et al 1 20

Wells completed 3
Production 28
Dry holes 1

WINKLER COUNTY

T. G. Hendrick Twp. 38n, Southern Crude O. P. Co. 8 227
George Sealy, Simms Pet. Co. et al 1 dry
Lum Daugherty, Atlantic O. P. Co. and J. C. Maxwell 1 1,760
T. G. Hendrick, Prairie O. & G. Co. 3 (second completion) 15,600

Wells completed 4
Production 17,587
Dry holes 1

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	4	0	0	4
Collingsworth	1	0	1	0
Gray	38	11,186	6	4
Hutchinson	9	928	1	1
Moore	4	150	1	2
Potter	2	0	0	5
Wheeler	9	0	1	8
Total September	68	12,264	10	22
Total August	80	27,400	8	25
Difference	12	15,136	2	3

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	3	5	7	15
Gray	23	11	38	72
Hutchinson	3	1	21	25
Moore	5	0	4	9
Wheeler	1	4	4	9
Miscellaneous counties	1	9	1	11
Total September	36	30	75	141
Total August	38	35	94	167
Difference	2	5	19	26

WELLS COMPLETED
CARSON COUNTY

E. J. Moore, Gibson Oil Corp. 1 ..... gas
S. B Burnett, Empire G. & F. Co. 26.. gas
Lee Bivins-A, Red River Gas Co. 4 ... gas
A. F. Bennett, Texas Interstate P. L. Co. 1 ..... gas

Completions 4
Gas wells 4
Gas production 84,000,000

COLLINGSWORTH COUNTY

Aldons, Shoup Bros. 1 ..... dry

GRAY COUNTY

J. S. Morse, Danciger O. & G. Co. 5 ... 200
G. H. Saunders, Panhandle Ref. Co. 5 .. 25
Lincoln-Saunders, Shamrock O. & G. 4. gas
A. Chapman, Smith & McDaniels 1 .... dry
D. J. McLaughlin, Champlin Ref. Co. 4.1200
W. E. Crow, Empire Gas & Fuel Co. 1 .. 80
J. M. Saunders-B, Shamrock O. & G. 1. dry
J. G. Noel, So. Pet. Exp. Co. 2 300
Combs & Worley, Wilcox-Pampa Oil 18. 200
Saunders, The Texas Company 21 145
J. B. Bowers, Gulf Prod. Co. 3 90
J. B. Bowers, Magnolia Pet. Co. 9..... dry
Wagoner, Midwest Expl. Co. 1-A 270
Langham, Mutual Cons. Oil Co. 2 240
Sheridan, Saulsbury et al 1 25
A. Combs et al, Gulf Prod. Co. 5 240
Shaw, Lefors Pet. Co. 4 ..... Gas
Wilson, Lefors Pet. Co. 1 ..... dry
Castleberry, Cockrell-McIlroy 7 596
Sailor, Cockrell-McIlroy 4 364
Bradford, Danciger O. & R. Co. 2 .... gas
Combs & Worley, Humble O. & R. Co. 7.1500
Archer, McIlroy Oil Co. 3 400
Bowers-A, Midwest Expl. Co. 2 2544
Bowers, Phillips Pet. Co. 2 40
Brown, The Texas Company 2 80
Harrah, Magnolia Pet. Co. 5 75
B. F. Talley, Brady 1 ..... dry
J. S. Morse, Dunlop 5 275
Cubine, Magnolia Pet. Co. 1 ..... dry
Morse, Sullivan & Ochiltree 1 500
Smith, British-American & Shell Pet. 2 407
Jackson, Cockrell-McIlroy Oil Co. 1 .. 540
Combs & Worley, Continental Oil Co. 1. gas
Sailor, Magnolia Pet. Co. 3 116
Bowers, The Texas Company 1 89
Bowers, The Texas Company 16 497
Bowers, The Texas Company 17 108

Completions 38
Production 11,186
Dry holes 6
Gas wells 4
Gas production 74,500,000

HUTCHINSON COUNTY

R. G. Byrd, Skelly Oil Co. 2 3
C. L. Dial et al, Gulf Prod. Co. 47 75
J. M. Sanford, Continental Oil Co. 1 ... 30
J. K. Quinn, Holmes et al 3 500
L. C. Pease (Childers), Phillips Pet. 1. dry
H. C. Pitcher-A, Smith & McDaniel 2.. 176
J. L. Moore, The Texas Company 6 75
C. R. Garner et al, Phillips Pet. Co. 2.. 75
J. Q. Bost (Sec. 14), Texas Interstate P. L. Co. 1 45

Completions 9
Production 928
Dry holes 1
Gas wells 1
Gas production 51,000,000

MOORE COUNTY

J. H. Shory, Shamrock O. & G. Co. 1... gas
J. T. Sneed, Jr., Texas Interstate P. L. 1 gas
C. R. Jones, Delmar Oil Co. 1 ..... dry
R. O. C. Brumley, Shamrock O. & G. 1.. 150

Completions 4
Production 150
Dry holes 1
Gas wells 2
Gas production 48,000,000

POTTER COUNTY

Lee Bivins, M. Spivey 1 ..... gas
R. B. Masterson, Texas Interstate P. L. 1 gas
Lee Bivins-A, Canadian River Gas Co. 13 gas

Completions 3
Gas wells 3
Gas production 48,500,000

WHEELER COUNTY

J. D. Purcell, Murchison & Fain 3 ..... gas
Close, Lone Star Gas Co. 2 ..... gas
J. Kirzan, Lone Star Gas Co. 1 ..... gas
Grogan, Murchison & Fain 2 ..... gas
Hicks (Hall), Johnson et al 2 ..... gas
Burcham, Prince & Adams 3 ..... dry
Stuckey, Davis et al 1 ..... gas
Brown, Lone Star Gas Co. 2 ..... gas
Harvey, Murchison & Fain 1 ..... gas

Completions 9
Dry holes 1
Gas wells 8
Gas production 276,800,000

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Mirando	38	1,175	19	4	23	36	59
Dobrowolski	1	10	0	0	2	4	6
Pettus area	12	1,450	3	2	11	16	27
Bruner	1	200	0	0	0	0	0
Darst Creek	11	10,916	0	0	10	18	28
Cartwright	1	0	1	0	0	2	2
Saxet	1	0	0	1	1	1	2
Chapman	3	75	2	0	4	20	24
Miscellaneous	16	10	14	1	46	93	139
Ttl. Sept.	84	13,836	29	8	97	190	287
Ttl. Aug.	186	26,311	84	15	112	171	283
Difference	102	12,475	45	7	15	19	4

WELLS COMPLETED
WILDCATS
DUVAL COUNTY

Luby, T. W. Callahan, Howard-D. C. Smith 1 ..... abd
Welder-Wood, Sal O. & G. Co. 2..... abd

COLE POOL—DUVAL COUNTY

S. Benavides, W. E. Mulholland 2..... abd

KOHLER POOL—DUVAL COUNTY

Kohler, Humble O. & R. Co. 49..... abd
Dinn, Simms Oil Co. 9 ..... abd

SCHOOLFIELD-O'BYRNE—DUVAL

Hahi-Norton, Magnolia Pet. Co. 1..... 75
Bishop Duval Land Co., C. E. Long 1.. abd

WILDCATS
STARR COUNTY
———, I. V. Maclean 1..... abd
WILDCATS
WEBB COUNTY
Slater, O. W. Killam 1..... abd
ALBERCAS POOL—WEBB COUNTY
Yeager-Stroman, South Tex. Prod. Co. 1 gas
COLE POOL—WEBB COUNTY
Bruni, O. W. Killam 19..... gas
Bruni, Trussel, Cezeaux & Partee 1.... abd
CAROLINA-TEXAS—WEBB COUNTY
R. O. Barnsley, Washington Texas O. & G. Co. 1 ..... gas
WILDCATS
ZAPATA COUNTY
Adams, National Oil Co. 1..... abd
Trevino, Penny Prod. Co. 1..... abd
CHARCO-REDONDO—ZAPATA COUNTY
Garcia, Mid-West Public Utilities 1.... abd
JENNINGS-CUELLAR—ZAPATA COUNTY
Cuellar, O. W. Killam 26-B..... 75
Cuellar, O. W. Killam 27-C..... 100
Cuellar, O. W. Killam 28-C..... abd
JENNINGS-MUCKELROY—ZAPATA
Trevino, Alamo Drlg. & Leasing Co. 4. 75
Trevino, Allied Gas Co. B-3..... 50
Trevino, Allied Gas Co. B-4..... 60
Trevino, Allied Gas Co. B-5..... 60
Trevino, Allied Gas Co. B-8..... 75
Gutierrez, Allied Gas Co.-Allen & Morris 6 75
Gutierrez, Allied Gas Co.-Allen & Morris 7 75
Trevino, Edington & Niles 5 "B"..... abd
Garza, Mirando Lbr. Co. 1..... abd
E. de los Santos, Nordan & Morris 1.. abd
E. de los Santos, Nordan & Morris 2.. gas
Montemayor, Smith-Clark, Inc. 1..... abd
Gutierrez, W. R. Shankle 3..... 125
Trevino, W. R. Shankle 6..... 70
Trevino, W. R. Shankle 7..... 150
Trevino, W. R. Shankle 8..... 50
Cuellar, S. R. C. Co. 1..... abd
Trevino, S. R. C. Co. 8-A..... 60
J. Bustamente, Winch & Henne 2..... abd

Wells completed 38
Production 1175
Dry 19
Gas 4
Gas production 96,000,000

DOBROWOLSKI POOL—BEXAR COUNTY
Sandemer, Penn-Tex Oil Co. 4..... 10
PETTUS AREA—BEE COUNTY
McKinney, Cosden Oil Co. 4..... 300
Kimball, Grayburg Oil Co. 1-A..... abd
Pettus townsite, Glasscock Bros. 1..... 75
Mauldin, Dr. Hewitt et al 1..... abd
Neumann, Houston Oil Co. 2..... 100
McKinney, Humble O. & R. Co. 6..... 500
Billingsley, Lange & Mimms 1..... abd
Block 19, townsite, S. R. C. Co. 1..... 50
Barnett, Sun Oil Co. 1..... gas
Ray, Union Prod. Co. 19..... 75
Ray, Union Prod. Co. 20..... 350
Ray, Union Prod. Co. 24..... gas

Wells completed 12
Production 1450
Dry 3
Gas 2
Gas production 35,000,000

BRUNER POOL—CALDWELL COUNTY
New, Humble O. & R. Co. 6..... 200
DARST CREEK—GUADALUPE COUNTY
Malaer, Gulf Prod. Co. 3..... 550
Thomas Dix, Gulf Prod. Co. 3..... 1200
Thomas Dix, Gulf Prod. Co. 4..... 1200
Posey Baker, Gulf Prod. Co. 6..... 1650
Posey Baker, Gulf Prod. Co. 7..... 600
T. Dix, La. Oil Ref. Co. 6..... 570
Richburg, Magnolia Pet. Co. 4..... 1916
Thomas Dix, Magnolia Pet. Co. 8—.... 400
Manford, Simms Oil Co. 4..... 1000
W. R. Posey, The Texas Co. 6..... 1740
Knoblock, The Texas Co. 9-B..... 90

Wells completed 11
Production 10,916
CARTWRIGHT POOL—LIVE OAK
Boothe, Houston Oil Co. 1..... abd
SAXET POOL NEUCES COUNTY
Ran Morgan, Houston Oil Co. 1..... gas
CHAPMAN POOL—WILLIAMSON COUNTY
F. Fuchs, E. L. Chapman 1..... 75
Partman, Jess Tomberlin 1..... abd
Simmons, Wilson et al 1..... abd
MISCELLANEOUS WILDCATS
Bastrop County—
Spooner, Pacific O. & G. Co. 1..... abd
Bee County—
Burnett, Batex Pet. Co. 2..... abd
Mauldin, Lange and Mimms 1..... abd
Holzmark, Simms Oil Co. 1..... gas
Billingsley, Southerland et al 1..... abd
Brooks County—
Holbein-Wormser, Houston Oil Co. 1... abd
Caldwell County—
Callahan, J. T. Callanhan 2..... abd
Osteen, Mathews et al 1..... abd
Frio County—
———, Simms Oil Co. 1..... abd
Guadalupe County—
Appling, J. O. Dore 1..... abd
Karnes County—
Porter, Dr. H. E. Hewitt 1..... abd
Medina County—
Hillenmeyer, Donaldson Oil Dev. Co. 2. abd
Howard, National Oil Co. 1..... 10
Fusselliman, Neuhaus et al 1..... abd
San Patricio County—
Schmalsteig, Cosden Oil Co. 1..... abd
Travis County—
Fuchs, Fox Oil Co. 1..... abd

Wells completed 16
Production 10
Dry 14
Gas 1
Gas production 56,000,000

GULF COAST FIELDS

Southeast Texas
Summary of Field Operations

	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Barbers Hill	6	2,345	1	0	1	28	29
Batson	4	38	1	0	0	0	0
Big Creek	0	0	0	0	0	2	2
Boling	1	0	1	0	0	0	0
Clay Creek	3	800	2	0	0	2	2
Damon Mound	0	0	0	0	1	1	2
DeWalt	0	0	0	0	0	1	1
Esperson	4	1,140	0	0	0	4	4
Goose Creek	1	0	1	0	0	1	1
Hankamer	0	0	0	0	0	3	3
High Island	1	0	1	0	0	1	1
Hull	4	542	0	0	0	2	2
Humble	8	3,696	2	0	2	11	13
Liberty	2	0	2	0	0	0	0
Lost Lake	0	0	0	0	0	1	1
Nash	0	0	0	0	0	1	1
N. Dayton	2	2,000	0	0	0	3	3
Orange	1	500	0	0	0	0	0
Orchard	0	0	0	0	0	2	2
Pierce Junc.	3	900	0	0	1	5	6
Port Neches	0	0	0	0	0	2	2
Raccoon Bend	0	0	0	0	1	6	7
Refugio	11	2,470	1	2	2	23	25
Saratoga	2	155	0	0	0	0	0
Sour Lake	0	0	0	0	0	1	1
Spindletop	3	323	1	0	0	3	3
W. Columbia	1	10	0	0	0	1	1
Miscellaneous	15	0	15	0	4	34	38
Total Sept.	72	14,919	28	2	12	137	149
Total Aug.	97	38,636	24	1	18	120	138
Difference	25	23,717	4	1	6	17	11

South Louisiana

Bayou Blue	0	0	0	0	0	2	2
Bayou Bouillon	0	0	0	0	0	2	2
Edgerly	1	0	1	0	0	0	0
Hackberry	3	2,200	2	0	0	3	3
Jennings	1	250	0	0	0	2	2
Lake Barre	0	0	0	0	0	1	1
Lockport	1	150	0	0	0	6	6
Port Barre	1	1,000	0	0	0	0	0
Starks	1	0	1	0	0	2	2
Sulphur	2	918	0	0	0	2	2
Sweet Lake	0	0	0	0	0	1	1
Vinton	2	4,550	0	0	0	4	4
Miscellaneous	9	0	9	0	3	18	21
Total Sept.	21	9,068	13	0	3	43	46
Total Aug.	39	8,351	22	0	7	40	47
Difference	18	717	9	0	4	3	1

Gulf Coast Summary

Total Sept.	93	23,987	41	2	15	180	195
Total Aug.	136	46,987	46	1	25	160	185
Difference	43	23,000	5	1	10	20	10

TEXAS
BARBERS HILL—CHAMBERS COUNTY
Henry Fisher, Mills Bennett Prod. Co. 1 1000
Gulf Higgins, Mills Bennett Prod. Co. 4 215
McKinney fee, Sinclair O. & G. Co. 3 .. 250
Wilburn fee, Sun Oil Co. 9 400
Chambers, Yount Lee Oil Co. 15 480
Wilburn, The Texas Company 4 ..... abd

Completions 6
Production 2345
Abandoned 1
BATSON—HARDIN COUNTY
Gulf, Ada Belle Oil Co. 141 2
Sun, Ada Belle Oil Co. 142 30
Gulf, East Batson Oil Co. 1 6
Hooks & Dills, Paraffine Oil Co. 2 .... abd

Completions 4
Production 38
Abandoned 1
BOLING—WHARTON COUNTY
Taylor, C. S. Thomas 1 ..... abd
CLAY CREEK—WASHINGTON COUNTY
Hunt, Sun Oil Co. 5 ..... abd
Draeger, Sun Oil Co. 2 ..... abd
Carraway, Sun Oil Co. 4 800

Completions 3
Production 800
Abandoned 2
ESPERSON—LIBERTY COUNTY
Esperson, Cranfill-Reynolds Co. 11 130
Esperson, Cranfill-Reynolds Co. 16 350
Davis, Cranfill-Reynolds Co. 5 360
Moores Bluff, Cranfill-Reynolds 4 300

Completions 4
Production 1140
GOOSE CREEK—HARRIS COUNTY
Gillett, A. F. Bradbury 5 ..... abd
HIGH ISLAND—GALVESTON COUNTY
McLean, Marrs McLean 18 ..... abd
HULL—LIBERTY COUNTY
Bashara, J. F. Bashara 1 400
Barngrover, Empire G. & F. Co. 28 34
Dolbear, Republic Prod. Co. 31 48
Dolbear, Republic Prod. Co. 130 60

Completions 4
Production 542
HUMBLE—HARRIS COUNTY
Grant, John Deering 1 104
Perkins, Masterson & Sullivan 1 ..... abd
Cherry, Raybourn-Long-Cezeaux Martin 1 ..... abd
Fee, Rio Bravo Oil Co. 5 240
Fee, Rio Bravo Oil Co. 6 470
Fee, Rio Bravo Oil Co. 7 90
Bender, Sun Oil Co. 11 882
Bender, Sun Oil Co. 13 1000
Long John Jones, Trap Shooter Riley 1 1000

Completions 9
Production 3780
Abandoned 2
LIBERTY—LIBERTY COUNTY
O'Brien, Empire Gas & Fuel Co. 13 ... abd
Green, The Texas Company 7 ..... abd

Completions 2
Abandoned 2
NORTH DAYTON—LIBERTY COUNTY
Quintette, Harrison Oil Co. 1 1500
Gulf, V. H. Borsodi 2 500

Completions 2
Production 2000
ORANGE—ORANGE COUNTY
Gunstream, Sun Oil Co. 7 500
PIERCE JUNCTION—HARRIS COUNTY
Manchester Corp., Gulf Prod. Co. 1 500
Cain, Navarro Oil Co. 3-A 100
Hume, Moody Corp. 5 300
Herman estate, Saxet Oil Co. 8 300

Completions 4
Production 1200
REFUGIO—REFUGIO COUNTY
Johnson, Houston Oil Co. 1 ..... gas
West, Houston Oil Co. 1 150
Rose Lambert, Houston Oil Co. 2 625
O'Brien, Moody-Seagraves Prod. Co. 2.. 75
Ryals, Pearson Properties 3 150
Clint Heard, Saxet Oil Co. 12 ..... abd
Kay, Saxet Oil Co. 1 700
Ryals, Saxet Oil Co. 2 190
Ryals, Saxet Oil Co. 3 ..... gas
City, Strube & Strube 1 380
Empson, C. A. Tucker 1 200

Completions 11
Production 2470
Abandoned 1
Gas 2
SARATOGA—HARDIN COUNTY
Cotton, Rio Bravo Oil Co. 94-A 90
Cotton, Rio Bravo Oil Co. 90-A 65
Cotton, Rio Bravo Oil Co. 91-A 100

Completions 3
Production 255
SPINDLETOP—JEFFERSON COUNTY
McFaddin, Yount Lee Oil Co. 25 48
McFaddin, Yount Lee Oil Co. 138 ..... abd
McFaddin, Yount Lee Oil Co. 139 275

Completions 3
Production 323
Abandoned 1
WEST COLUMBIA—BRAZORIA COUNTY
Smith & Brooks, Anderson et al 1 10
MISCELLANEOUS TEXAS
Brazoria County—
Allen—Reese, Mills Bennett Prod. Co. 1 abd
Stratton Ridge—Sealium, Rycade Oil Corp. 1 ..... abd
Hunter, Rucks & Patterson 1 ..... abd
Wisdom, Rycade Oil Corp. and Vacuum Oil Co. 1 ..... abd
Danbury—Blakely, Shell Pet. Corp. 4 .. abd
Haury, Shell Pet. Corp. 1 ..... abd
Chambers County—
Jackson, The Texas Company 1 ..... abd
Harris County—
Cook, Mission Drlg. Co. 2 ..... abd
Montgomery County—
Drought, Rycade Oil Corp. 1 ..... abd
Polk County—
Roberts, Ace Oil Co. 1 ..... abd
Freeman, W. H. Freeman 2 ..... abd
Waller County—
R. Chapman, Viehl and Morris 1 ..... abd
Walker County—
Fails, Texas State Oil Co. 1 ..... abd
Washington County—
Schram, W. Birdwell 1 ..... abd
Pruiss, Clifton et al 1 ..... abd

Completions 15
Production 0
Abandoned 15
SOUTH LOUISIANA
EDGERLY—CALCASIEU PARISH
Hunter, Rex Pet. Co. 12 ..... abd
HACKBERRY—CAMERON PARISH
Hebert, Federal Pet. Co. 1 ..... abd
Andrus Koonce, Duhon Oil & Mineral Co. 1 ..... abd
State, Yount Lee Oil Co. 21 2200

Completions 3
Production 2200
Abandoned 2
JENNINGS—ACADIA PARISH
Syndicate, Heywood & Heywood 1 250
LOCKPORT—CALCASIEU PARISH
Moss, Union Sulphur Co. 1 150
PORT BARRE—ST. LANDRY PARISH
Hoskins, Gulf Refining Co. 3-A 1000
STARKS—CALCASIEU PARISH
Industrial Lumber Co., J. G. Sutton 1.. abd
SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 734 900
Fee, Union Sulphur Co. 737 18

Completions 2
Production 918
VINTON—CALCASIEU PARISH
Gray, Vinton Pet. Co. 9 2250
Wilson, Wilson-Broach 4 2300

Completions 2
Production 4550
MISCELLANEOUS LOUISIANA
Acadia Parish—
J. Roller, Charles P. Siess, trustee 1 .. abd
Iberia Parish—
New Iberia—Ben White, Lake Oil Co. 1 abd
Jefferson Island, Jefferson Lake Oil Co. 10 ..... abd
Vermillion Bay, The Texas Company 5 ..... abd
Lafayette Parish—
Marmetin, Pure Oil Co. 1 ..... abd
LaFourche—
Wilbert, Texas Gulf Sulphur Co. 1 .... abd
Wilbert, Texas Gulf Sulphur Co. 2 .... abd
Wilbert, Texas Gulf Sulphur Co. 3 .... abd
Vermillion Parish—
Turkey Island, Gascom Oil Co. 1 ..... abd

Completions 8
Production 0
Abandoned 8
SOUTHERN MISSISSIPPI
PINE RIDGE—ADAMS COUNTY
Stowers, A. C. Glassell et al 1 ..... abd
PORT ADAMS—WILKINSON COUNTY
Artonish, A. C. Glassell et al 1 ..... abd

EAST CENTRAL TEXAS

Summary of Field Operations

	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Anderson	0	0	0	0	0	3	3
Angelina	0	0	0	0	1	0	1
Camp	0	0	0	0	1	0	1
Delta	1	0	1	0	0	2	2
Ellis	0	0	0	0	0	3	3
Fannin	1	0	1	0	0	0	0
Gregg	0	0	0	0	1	0	1
Henderson	1	0	1	0	0	3	3
McLennan	1	0	1	0	0	0	0
Morris	0	0	0	0	0	1	1
Nacagdoches	0	0	0	0	0	1	1
Navarro	1	0	1	0	0	1	1
Rusk	0	0	0	0	0	3	3
Smith	0	0	0	0	0	4	4
Van Zandt	20	17,198	4	0	1	19	20
Total Sept.	25	17,198	9	0	4	38	42
Total Aug.	30	101,330	9	2	18	42	61
Difference	5	84,132	0	2	14	5	19

DELTA COUNTY
Irwin, Hasel Curtis Oil Co. 1..... abd
FANNIN COUNTY
McSwain, E. M. Rogers 1..... abd
HENDERSON COUNTY
R. H. Davis, Sunray Oil Co. 1..... abd
McLENNAN COUNTY
Hardwick, C. E. Bonwell 1..... abd
NAVARRO COUNTY
Wilson, Killiam & Phillips 1..... abd
VAN ZANDT COUNTY
Sanger Bros., Geo. Anderson et al 1....1655
Mathews, C. L. Clop et al 1..... abd
C. W. Morris, Dennis Oil Co. 1..... abd
Ruth Star Blake, Humble O. & R. Co. 2 101
M. R. Bolin, Pure Oil Co. 2.....3500
A. D. Clark, Pure Oil Co. 4.....5000
A. D. Clark, Pure Oil Co. 5..... 160
J. E. Crumble, Pure Oil Co. 1..... 111
R. A. Howell, Pure Oil Co. 1..... 100
M. L. McMuhon, Pure Oil Co. 1.....5000
W. E. Morris, Pure Oil Co. 1..... 155
I. D. Miller, Pure Oil Co. 1..... 192
O. L. Swain, Pure Oil Co. 1..... 120
W. F. Swain, Pure Oil Co. 1..... 93
Van School Lot, Pure Oil Co. 2..... 120
Ella York, Pure Oil Co. 1..... 503
R. V. White, The Texas Co. 1..... 88
W. F. Foster, Texas Chief Oil Co. 1.... abd
W. E. Morris, Van Joint Acct. 2..... 300
Sharp-Robinson, Van Zandt County Oil & Dev. Co. 1 ..... abd

Total completions 20
Production 17,198
Abandoned 4

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Bowie	0	0	0	0	1	2	3
Camp	1	0	1	0	1	0	1
Cass	0	0	0	0	1	1	2
Harrison	0	0	0	0	1	1	2
Marion	0	0	0	0	0	2	2
Panola	2	0	0	2	2	5	7
Red River	0	0	0	0	0	2	2
Sabine	0	0	0	0	0	1	1
Shelby	0	0	0	0	1	1	2
Ttl. Sept.	3	0	1	2	7	15	22
Ttl. Aug.	1	0	0	1	9	14	23
Difference	2	0	1	1	2	1	1

*Gas production—Panola, 24,696,000 feet.

WELLS COMPLETED
CAMP COUNTY
R. M. Montgomery Survey; Enfelt, Rogers et al 1 ..... dry
PANOLA COUNTY
B. C. Jordan Survey; Tom Moore, Nat. Gas Products Co. 3 ..... gas
E. F. Mitcheson Survey; G. W. Brumbie, The Texas Company 11 ..... gas
Abe Booker Survey; McNeese, Warren & Davis 1 (drk) ..... abd

Gas production 24,696,000

ARKANSAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Chicot	0	0	0	0	1	1	1
Clay	0	0	0	0	0	1	1
Cleburne	0	0	0	0	0	2	2
Columbia	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Garland	0	0	0	0	0	1	1
Hot Spring	0	0	0	0	1	1	2
Johnson	0	0	0	0	0	3	3
Lawrence	0	0	0	0	1	0	1
Lincoln	0	0	0	0	1	0	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Madison	1	0	1	0	0	1	1
Miller	1	0	1	0	1	3	4
Nevada	0	0	1	0	0	0	0
Ouachita	5	125	1	0	2	4	6
Pike	0	0	0	0	0	1	1
Pope	0	0	0	0	0	2	2
Scott	0	0	0	0	1	1	2
Sebastian	1	0	1	0	0	4	4
Union	3	380	2	0	5	6	11
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	4	4
Yell	0	0	0	0	0	1	1
Ttl. Sept.	11	505	7	0	12	41	53
Ttl. Aug.	9	670	4	1	13	36	49
Difference	2	165	3	1	1	5	4

WELLS COMPLETED
JOHNSON COUNTY
14-10-24 C. H. Harvey, Ark.-La. Pipe Line Co. 1 (loc) ..... abd
LAFAYETTE COUNTY
25-19-25 Vaughn, Crawford Drlg. Co. 1 (drk) ..... abd

MADISON COUNTY

17-16-2e Hallem, J. W. Baxter 1 ..... dry

MILLER COUNTY

30-15-25 Dean, Big Bill Oil Co. 1 ... dry
25-15-26 Dale, C. V. Lens 1 (O.W.D.D.) abd

NEVADA COUNTY

21-14-20 E. W. Groves, C. F. Steele 1.. dry

OUACHITA COUNTY

7-15-17 Buck, Anderson & Wimmer 1 dry
24-15-15 Farris, Standard Oil Co. 7 ... 30
24-15-16 J. T. Arnold, Wilson & Chapman 1-A 15
24-15-16 Arnold, Wilson & Chapman 1-B 40
24-15-16 Arnold, Wilson & Chapman 2-B 40

Wells completed 5
Production 125
Dry 1

SEBASTIAN COUNTY

9- 7-29 Speares, M. W. Greeson 1 ... dry

UNION COUNTY

7-18-15 Pratt, H. L. Hunt 6 ..... dry
12-17-14 R. Furlough, Ohio Oil Co. 2.. 350
33-16-14 Perdue, Sunby et al 2 ..... dry

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Drlg.	Ttl.
Avoyelles	0	0	0	0	0	2	2
Bienville	0	0	0	0	0	4	4
Bossier	10	420	5	3	3	12	15
Caddo	3	30	1	0	7	3	10
Caldwell	0	0	0	0	0	1	1
Catahoula	0	0	0	0	1	1	2
Claiborne	1	0	0	1	2	3	5
Concordia	1	0	0	1	1	1	2
DeSoto	6	116	5	0	1	9	10
Jackson	1	0	1	0	0	0	0
LaSalle	2	65	0	0	1	0	1
Lincoln	1	0	1	0	0	0	0
Morehouse	1	0	0	1	3	5	8
Natchitoches	1	0	1	0	1	4	5
Ouachita	5	0	0	5	4	2	6
Rapides	1	0	1	0	0	0	0
Red River	2	75	1	0	0	2	2
Richland	14	0	1	13	5	11	19
Sabine	9	600	3	0	12	32	44
Tensas	0	0	0	0	0	2	2
Union	3	0	0	3	2	2	4
Webster	6	120	2	0	2	3	5
W. Carroll	0	0	0	0	0	1	1
Ttl. Sept.	67	1,426	22	27	48	100	148
Ttl. Aug.	70	1,723	30	27	55	117	172
Difference	3	297	8	0	7	17	24

*Gas production: Bossier, 16,605,000 feet; Claiborne, 50,000,000 feet; Concordia, 3,000,000 feet; Morehouse, 3,976,000 feet; Ouachita, 19,266,470 feet; Richland, 420,548,800 feet; Union, 11,118,920 fee; total, 523,515,190 feet.

WELLS COMPLETED

BOSSIER PARISH

31-23-11 Bain, O. L. Hickman 1 ..... dry
13-17-12 Thigpen-Herold, La. Gas & Fuel Co. 3 ..... gas
25-22-12 Matlock, Magnolia Pet. Co. 2. dry
12-19-11 Kendrick, H. I. Morgan 2 ... 300
12-19-11 Kendrick, H. I. Morgan 3 ... dry
31-23-11 Henry Rose, The Texas Company 2 120
26-23-13 Bollinger, Triangle Drilling Co. 1 ..... dry
22-22-12 Roberson, Woodley Pet. Co. 1 (jkd) ..... dry
13-17-12 Schuler, Woodley Pet. Co. 3 .. gas
13-17-12 Schuler, Woodley Pet. Co. 4 .. gas

Wells completed 10
Production 420
Gas 3
Dry 5
Gas production 16,605,000

CADDO PARISH

30-22-15 Barr, Bayou State Oil Corp. 3. 20
7-20-15 Burton, J. W. Burton 3 10
19-19-14 Oden, Falcon Oil Co. 1 ..... dry

CLAIBORNE PARISH

6-19- 5 Hodges et al, Triangle Drlg. Co. 1 ..... gas

Gas production 50,000,000

CONCORDIA PARISH

30- 8-10 Britton & Koontz, A. C. Glassell (loc) ..... abd
41- 8-10 Pittsfield Planting Co., A. C. Glassell 1 ..... gas

Gas production 3,000,000

DE SOTO PARISH

14-11-15 Dry, Gulf Ref. Co. 1 ..... dry
36-15-13 Nelson, R. O. Roy 1 ..... dry
35-15-13 Nelson, R. O. Roy 2 ..... dry
35-15-13 Wilcox, R. O. Roy 1 ..... dry
5-13-13 Dowling Bros., Standard Oil Co. 2 176
5-13-13 Farmer, Standard Oil Co. 3-A dry

Wells completed 6
Production 116
Dry 5

JACKSON PARISH

35-15-4w Southern Advance Paper Bag, El Dorado Chief Oil Co. 1.. dry

LA SALLE PARISH

25-10-1e Russell, O. W. Clark 2-B ... 15
10- 9-1e Zenoria Lbr. Co., Montague Oil Co. 8 50

LINCOLN PARISH

26-20-4 Lewis & Co., Ark Fuel Oil Co. 1 ..... dry

MOREHOUSE PARISH

23-20-4e Sandidge, Ouachita Nat. Gas Co. 6 ..... gas

Gas production 3,976,000

NATCHITOCHES PARISH

7- 8-9 Winn, Robeline O. & G. Co. 1. dry

OUACHITA PARISH

48-19-4e McEnery, Ark.-La. Pipe Line Co. 5 ..... gas
36-19-3e White, Greenwood Prod. Co. 1 gas
6-18-4e Fee, Industrial Gas Co. 3 .... gas
41-18-4e J. P. Parker, Jordan Drlg. Co. 1 ..... gas
15-18-4e Breard, Magnolia Pet. Co. 1 .. gas

Wells completed 5
Gas 5
Gas production 19,266,470

RAPIDES PARISH

9- 5-2e Wickliffe, Ayers Bros. 1 .... dry

RED RIVER PARISH

34-13-11 La. Delta Pecan Co., E. C. Lucas 1 75
30-12-9 Clarkson, George L. Pace et al 1 ..... dry

RICHLAND PARISH

13-17-5 Hunt, Austin & McDonald 1.. gas
15-16-6 J. E. Duff, Hope Prod. Co. 1. gas
7-16-7 Minne LeGrande, International Gas Products Co. 1 (loc).. abd
17-16-6 McCoy, Northern La. Nat. Gas Co. 5-B ..... gas
23-16-6 McKay, Northern La. Nat. Gas Co. 1 ..... gas
28-17-6 Etheridge, La. Gas & Fuel Co. Co. 1 ..... gas
31-16-6 Kill et al, Palmer Corp. 1 .... gas
25-16-5 Noble, Palmer Corp. 1 ..... gas
29-16-6 M. L. McCoy, Richland Prod. Co. 3 ..... gas
24-16-5 F. B. and E. A. Sartor, Southern Carbon Co. 6 ..... gas
23-16-6 Thomason et al, Southern Carbon Co. B-1 ..... gas
31-16-6 Thomason, Southern Carbon Co. 1-D ..... gas
28-16-6 Boise, United Carbon Co. 1.. gas
27-15-6 Noble, United Carbon Co. 1... gas
22-16-6 J. M. Thomason, United Carbon Co. 1-A ..... dry

Wells completed 14
Gas 13
Dry 1
Gas production 420,548,800

SABINE PARISH

4- 6-11 J. B. Hill, Boone, Tr., 1 (loc) abd
25- 8-12 Newton, Huber & Mann 1 ... 25
26- 8-12 Tatum, Lacey Pet. Co. 1 500
1- 7-13 J. W. Hale, LeGrande Oil Co. (loc) ..... abd
33- 8-12 Bowman-Hicks Lbr. Co., Loring Oil Co. 10 10
27- 8-12 Schuffert, Loring Oil Co. 1... 25
33- 8-12 Bowman-Hicks Lbr. Co., Ohio Oil Co. 5 10
6- 7-11 Sabine Lbr. Co., Pelican Nat. Gas Co. 3 ..... dry
31- 8-12 Dow, Philp Bros. 1 ..... dry
26- 8-12 Sabine State Bank, A. H. Tarver et al 2 30
27- 8-12 Glauque, The Texas Company 1 ..... dry

Wells completed 9
Production 600
Dry 3

UNION PARISH

9-21-3e Norsworthy, Greenwood Prod. Co. 4 ..... gas
33-21-4e Grayling Lbr. Co., Industrial Gas 6 ..... gas
11-20-3e Hollis, Nemours Corp. 1 ..... gas
32-23-4 Murray, Stovall Drilling Co. 1 (loc) ..... abd

Gas production 11,118,920

WEBSTER PARISH

24-23-11 Coyle, Ideal O. & G. Co. 1 (loc) ..... abd
2-22-11 Cook, H. M. Jones 2 25
36-23-11 Cochrane, Kansas City Supply Co. 1 (jkd) ..... dry
30-23-11 Slack, Liggett et al 1 30
2-22-11 Sally Coyle, Magnolia Pet. Co. 2 45
36-23-11 Slack, Merrick Oil Corp. 2 (drk) ..... abd
12-22-11 J. R. Slack, W. O. Neely 1 (loc) ..... abd
21-23-11 Waller Estate, Service Drlg. & Royalty Co. 4 ..... dry
36-23-11 Slack, Sarepta Oil Co. 1 (drk) abd
1-23-11 Gardner, Sarepta Oil Co. 2 (drk) ..... abd
6-22-11 Gardner, Sarepta Oil Co. 3 (drk) ..... abd
1-22-11 Slack, Southern Prod. Co. 4.. 30

Wells completed 6
Production 120
Dry 2

MISSISSIPPI FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rgs.	Drlg.	Ttl.
Adams	1	0	1	0	0	0	0
Alcorn	0	0	0	0	0	1	1
Attala	0	0	0	0	1	0	1
Chickasaw	0	0	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Hinds	9	0	5	4	4	10	14
Humphreys	0	0	0	0	0	1	1
Lafayette	0	0	0	0	1	0	1
Lauderdale	0	0	0	0	1	2	3
Lincoln	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	3	3
Rankin	2	0	0	2	1	3	4
Warren	0	0	0	0	0	1	1
Wilkinson	1	0	1	0	0	0	0
Yalobusha	0	0	0	0	0	1	1
Yazoo	0	0	0	0	0	1	1
Total	13	0	7	6	8	27	35
August	7	0	3	4	13	31	44
Difference	6	0	4	2	5	4	9

*Gas production—Hinds, 75,783,840 feet; Rankin, 100,000,000 feet; total, 175,783,840 feet.

ADAMS COUNTY

29- 8-2w Artonish, A. C. Glassell 1 ... dry

HINDS COUNTY

5- 4-1e Elton, Dome Oil Co. 1 ..... dry
2- 5-1e Millstein, Feazel O. & G. Co. 1 gas
10- 5-1e City of Jackson, Gulf Ref. Co. 1 ..... gas
26- 6-1e Crane, Gulf Ref. Co. 1 ..... gas
2- 5-1e Belnaven Heights, Interior Oil Co. 1 (drk) ..... abd
2- 5-1e Mayes, Jackson O. & G. Co. 2 dry
2- 5-1e Crisler, Love Pet. Co. 1 ..... gas
2- 5-1e Dreyfus, Love Pet. Co. 1 .... dry
16-12-1e School, Ohio Oil Co. 1 ..... dry
8- 6-2e Holliday & Ross, J. A. Weir et al 1 ..... dry

Wells completed 9
Gas 4
Dry 5
Gas production 75,783,840

RANKIN COUNTY

7- 5-2e Hartfield, Gulf Ref. Co. 1 ... gas
12- 5-1e Pate, Pearl River O. & G. Co. 1 ..... gas

Gas production 100,000,000

WILKINSON COUNTY

1-2n-5w Stowers, A. C. Glassell 1 ... dry

TENNESSEE FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Putnam	0	0	0	0	0	1	1
Smith	0	0	0	0	0	1	1
Warren	0	0	0	0	0	1	1
Clay	0	0	0	0	1	1	2
Dickson	0	0	0	0	0	2	2
White	0	0	0	0	0	1	1
Morgan	0	0	0	0	0	2	2
Lincoln	0	0	0	0	0	2	2
Overton	0	0	0	0	0	2	2
Coffee	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Cheatham	0	0	0	0	0	1	1
Total Sept.	0	0	0	0	1	16	17
Total Aug.	3	0	0	3	1	14	15
Difference	3	0	0	3	0	2	2

MISSOURI

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs.	Drlg.	Ttl.
St. Louis	0	0	0	0	0	4	4
Total Sept.	0	0	0	0	0	4	4
Total Aug.	3	0	3	0	0	3	3
Difference	3	0	3	0	0	1	1

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Warren	4	6	3	0	0	0	0
Barren	0	0	0	0	0	2	2
Allen	0	0	0	0	0	1	1
Ohio	17	229	4	7	0	32	32
Daviess	9	120	4	0	4	29	33
Hancock	7	130	2	1	0	4	4
McLean	7	25	3	0	1	7	8
Henderson	5	25	1	1	0	5	5
Webster	0	0	0	0	0	3	3
Butler	0	0	0	0	1	1	2
Hopkins	0	0	0	0	0	7	7
Muhlenberg	0	0	0	0	0	8	8
Christian	0	0	0	0	2	2	4
Union	1	0	1	0	0	2	2
Breckenridge	1	0	1	0	0	0	1
Logan	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Metcalf	0	0	0	0	0	1	1
Cumberland	0	0	0	0	0	2	2
Clinton	0	0	0	0	0	1	1
Hart	1	240	0	0	0	1	1
Wayne	0	0	0	0	0	3	3
Powell	1	2	0	0	0	0	0
Estill	4	21	1	0	0	2	2
Lee-Owsley	1	10	0	0	0	2	2
Lawrence-Johnson	4	18	0	0	1	1	2
Johnson-Magoffin	4	16	1	0	0	5	5
Clay	0	0	0	0	0	1	1
Knox	0	0	0	0	0	1	1
McCracken	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Leslie	0	0	0	0	0	1	1
Pike	1	0	0	1	0	0	0
Floyd	0	0	0	0	0	4	4
Total Sept.	67	842	21	10	10	135	145
Total Aug.	97	2,211	31	22	4	121	135
Difference	30	1,369	10	12	6	4	10

WELLS COMPLETED

WARREN COUNTY

Bowling Green—E. Morgan, Morrow H. Harp 12 6
W. S. Hurt, P. H. Lavelle 1..... dry
J. E. Moats, H. Julian & Co. 1..... dry
P. M. Perkins, P. M. Perkins 2..... dry

Wells completed 4
Production 6
Dry 3

OHIO COUNTY

Hartford—J. A. Haynes, J. A. Ford & Co. 1 ..... dry
J. B. Harrison, Mecca Oil Co. 1..... dry
S. F. Whitely, H. L. Ogle & Co. 2.... gas
S. F. Whitely, H. L. Ogle & Co. 3.... gas
G. J. Barnett, Wood Oil 2..... gas
Burdett Hrs., Wood Oil 2..... gas
Jim Crow, Jas. C. Ellis & Co. 7..... gas
Bud Hoagland No. 2, Jas. C. Ellis & Co. 7 100
Cody Hoover, Jas. C. Ellis & Co. 7.. 100
A. F. Bellamy, Brenner & Adams 3.. 10
S. E. Russell, Hall & Garrison 1..... gas
Alfred Brown, Cumberland Pet. 2.... dry
John Purcell, Ohio Oil 1..... 5
W. H. Lyons, Pointer & Co. 1..... gas
Millard Reynolds Hrs., D. J. White & Co. 1 ..... dry
T. P. Royal 25-ac., P. A. Rowe & Co. 6 8
J. A. Westerfield, Gartford Dev. 3... 6

Wells completed 17
Production 229
Dry 4
Gas 7

DAVIESS COUNTY

Owensboro—G. D. Robertson, Louisville G. & E. 1 ..... dry
J. H. Pate, Prairie O. & G. 1..... dry
H. K. Atherton, S. M. Sirman 5..... 25
Rose B. Tyler, Eastern Gulf Oil 5.... 40
L. Purcell, Young, Goldberg & Co. 15 dry
E. C. Ward, New Domain O. & G. 5.. 40
Ethel Chapman, Eastern Gulf O.I 7.. 10
Mary Ann Sparks, Hupp, Duff & Co. 3 5
J. L. Bennett, Leeper O. & G. 2..... dry

Wells completed 9
Production 120
Dry 4

HANCOCK COUNTY

Pellville—J. D. Crow No. 2, D. T. Bolling 1 80
Richard Crow, D. T. Bowling 1..... 10
Lewis Richards, D. T. Bolling 1..... 35
Lewis Richards, D. T. Bolling 2..... dry
Wm. Richardson, Duncan & Beeson 1 5
Wm. Bates, Chester Oil Co. 1..... gas
H. C. Emerick, Armistead Oil 1..... dry

Wells completed 7
Production 130
Dry 3
Gas 1

McLEAN COUNTY

Calhoun—Owen Samson, Jas. C. Ellis & Co. 1 10
Geo. Scott, Jas. C. Ellis & Co. 1..... dry
Henry Scott, Jas. C. Ellis & Co. 1.... dry
J. D. Bailey, Jas. C. Ellis & Co. 1.... 5
Geo. Nichols, Jas. C. Ellis & Co. 1... dry
Lun Harris, Olean Pet. 1..... 5
McManama 174-ac., Ohio Oil 1..... 5

Wells completed 7
Production 25
Dry 3

HENDERSON COUNTY

Niagara—F. Priest, Ellis & Young 1... 8
Will Shemwell, Niagara O. & G. 1... 12
Sam King, Niagara O. & G. 1..... gas
Walker Basket, Clarh-Hill Drlg. 3.... 5
Latta & Yeaman, Washman & King 1 dry

Wells completed 5
Production 25
Dry 1
Gas 1

UNION COUNTY

Morgantown—Walter Young, Wood Oil 1 dry

BRECKENRIDGE COUNTY

Glen Dean—S. T. Howard, John Ogden & Co. 1 ..... dry

HART COUNTY

Munfordville—Lewis McKinney, Norris & Davis 1 240

POWELL COUNTY

Dist. 15—McCoy-Rogers, E. A. Farmer, trustee 1 3

ESTILL COUNTY

Dist. 7—Will Shouse, Amsler, McEldowney & Bowser 12 1
Dist. 10—Jas. Evans, Gabbard & Cox 2 10
Jas. Evans, Gabbard & Cox 3..... 10
J. P. Briengar, Humes & Benton 1.. dry

Wells completed 4
Production 21
Dry 1

LEE-OWSLEY COUNTIES

Dist. 17—Darch & Short Hrs., First Nat. Bank of Jackson 5..... 10

LAWRENCE-JOHNSON COUNTIES

Dist. 32—Mrs. Proctor Sparks, Swiss Oil Corp. 37 3
Jess Lyons, Swiss Oil Corp. 38..... 5
P. P. Holbrook, Swiss Oil Corp. 57.. 5
Dist. 33—Sanford Lyons, Swiss Oil Corp. 36 5

Wells completed 4
Production 18

JOHNSON-MAGOFFIN COUNTIES

Dist. 29—Carter Wheeler, Peoples Pittsburg Trust 2 3
Paris Long, Peoples Pittsburg Trust 10 3
Oscar Wheeler, Bed Rock Oil 1..... dry
Dist. 31—H. H. May, Hupp, Duff & Co. 10 10

Wells completed 4
Production 16
Dry 1

PIKE COUNTY

Pikeville—At Cowpens, United Carbon 1 gas

ROCKY MOUNTAIN AREA

WYOMING

Summary of Field Operations

District or County—	Comp.	Prod.	Dry	Gas	Rgs.	Drlg.	Ttl.
Salt Creek	1	123	0	0	2	4	6
Big Horn	3	0	0	2	0	5	5
Carbon	0	0	0	0	3	8	11
Converse	0	0	0	0	0	5	5
Fremont	1	4	0	0	0	7	7
Hot Springs	0	0	0	0	0	3	3
Johnson	0	0	0	0	0	3	3
Lincoln	0	0	0	0	1	6	7
Natrona*	1	25	0	0	1	14	15
Niobrara	0	0	0	0	1	3	4
Park	4	950	0	1	5	16	24
Sublet	0	0	0	0	1	10	11
Sweetwater	3	0	0	2	3	8	11
Uinta	0	0	0	0	3	12	15
Weston	7	1,523	2	0	4	13	17
Miscellaneous	0	0	0	0	1	3	4
Ttl. Sept.	18	2,625	2	5	27	120	147
Ttl. Aug.	30	1,704	6	1	28	120	148
Difference	3	921	4	4	1	0	1

*Exclusive of Salt Creek.

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Boulder	6	5	0	0	0	4	4
Douglas	1	0	1	0	0	0	0
Fremont	0	0	0	0	0	14	14
Huerfano	1	0	1	0	0	2	2
LaPlata	0	0	0	0	0	3	3
Larimer	0	0	0	0	2	6	8
Las Animas	0	0	0	0	1	3	4
Moffat	3	0	1	2	7	6	13
Morgan	0	0	0	0	0	3	3
Rio Blanco	1	0	0	1	0	3	3
Routt	0	0	0	0	2	2	4
Weld	0	0	0	0	0	4	4
Miscellaneous	0	0	0	0	0	31	31
Ttl. Sept.	6	0	1	3	12	80	92
Ttl. Aug.	5	0	5	0	13	82	95
Difference	1	0	2	3	1	2	3

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
DeBaca	0	0	0	0	0	2	2
Eddy	1	0	1	0	2	6	8
Lea	24	197,724	0	0	3	63	71
McKinley	0	0	0	0	1	9	10
Rio Arriba	0	0	0	0	0	4	4
San Juan	0	0	0	0	2	8	10
Sandoval	1	0	1	0	0	0	0
San Miguel	0	0	0	0	0	5	5
Torrance	0	0	0	0	1	3	3
Valencia	2	0	2	0	1	1	2
Miscellaneous	0	0	0	0	2	9	11
Ttl. Sept.	28	197,724	4	0	18	109	127
Ttl. Aug.	18	122,138	3	0	27	110	137
Difference	10	75,586	1	0	9	1	10

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Cat Creek	0	0	0	0	0	1	1
Kevin-Sunburst	14	124	7	2	8	13	21
Pondera	0	0	0	0	1	1	2
Border Field	4	60	2	1	1	8	9
Miscellaneous	10	1,000	5	4	12	63	75
Total Sept.	28	1,184	14	7	22	86	108
Total Aug.	35	815	20	5	21	86	107
Difference	7	369	6	2	1	0	1

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rig	Dlg.	Ttl.
Total Sept.	0	0	0	0	1	29	30
Total Aug.	0	0	0	0	1	29	30
Difference	0	0	0	0	0	0	0

WYOMING

WELLS COMPLETED

24-56- 98 Government, Prod. & Ref. 3.. gas
25-56- 97 Pryde, Ohio Oil Co. 1 ..... gas
27-3n- 1w Enos, Delta Oil Co. 1 4
26-40- 79 Wyoming Associated Oil 25-SD-2 123
11-38- 78 Smith, Wyalta Oil Co. 4 25
30-61-100 Freeman, Texas Prod. Co. 1.. 400
24-58-100 Continental Oil Co., 26 Elk No. 2 ..... gas
14-48-102 Pitchfork, Prod. & Ref. 2 .. 250
24-58- 98 Kirk & Arnott 24 300
16-17-104 Hay, Mountain Fuel Supply Co. 1 ..... gas
16-16-104 State, Mountain Fuel Supply Co. 2 ..... gas
32-46- 64 McCullogh, Jas. McCullogh 2 93
25-46- 64 Foster, Moss et al 2 ..... dry
14-46- 64 Osage Trust Co. 4 600
14-46- 64 Bock, Lambie Oil Co. 2 500
14-46- 64 Updike, Curtis & Straitiff 3.. 300
24-46- 64 Foster, Moss et al 1 ..... dry
7-46- 63 Paris-Wyoming Oil Co. 1 ... 30

Wells completed	18
Production	2625
Gas production	91,000,000
Dry and abandoned	2

COLORADO

WELLS COMPLETED

11-9s- 68 Cannon, Perry Park O. & G. Co. 1 ..... dry
5-2s- 69 Ojo Expltn. Co. 1 ..... dry
35-12-101 Lasher, Mountain Fuel Supply Co. 1 ..... gas
19-12-100 Berlin, Texas Prod. Co. 1 ... gas
34-4n- 92 Sales, McCormick Oil Co. 1.. abd
9-2s- 96 Fordham, Magnolia Pet. Co. 1-A ..... gas

Wells completed	6
Gas production	13,310,000
Dry and abandoned	3

NEW MEXICO

WELLS COMPLETED

33-20-29 Dooley, Geo. F. Getty, Inc. 5 dry
10-19-38 State, Midwest Ref. Co. 8 ... 739
32-18-38 Grimes, Gypsy Oil Co. 2 20,472
4-19-38 State, Midwest Ref. Co. 8 ..19,953
32-18-38 State-Northrup, Ohio Oil Co. 3 18,884
32-18-38 Grimes, Gypsy Oil Co. 1 21,972
19-18-38 McKinley, Shell Pet. Corp. 2..17,042
33-18-38 State, Landreth Prod. Co. 1-B 2,768
4-19-38 State, Midwest Ref. Co. 26 ... 2,202
4-19-38 State, Midwest Ref. Co. 32 4,536
30-18-38 Bowers, Humble O. & R. Co. 5 5,292
32-18-38 State, Shell Pet. Corp. 3-A.. 1,055
29-18-38 Bowers, Humble O. & R. Co. 3 13,200
30-18-38 Bowers, Humble O. & R. Co. 4 16,358
32-18-38 State, Shell Pet. Corp. 2 7,646
32-18-38 Grimes, Gypsy Oil Co. 5 5,785
34-18-37 Graham, Gypsy Oil Co. 1 ... 4,406
29-18-38 State, Amerada Pet. Corp. 2-B 1,752
4-19-38 McKinley, The Texas Co. 1.. 6,864
31-18-38 Fowler, Empire G. & F. Co. 2 1,425
31-18-38 Fowler, Skelly Oil Co. 1 4,320
19-18-38 Hardin, Tidal Oil Co. 1 8,100
19-16-38 McKinley, Shell Pet. Corp. 5. 5,702
32-18-38 State, Shell Pet. Corp. 4-A.. 8,000
15-22-36 State-McDonald, Ohio Oil Co. 1 250
23-20-2w Marion, Mayflower O. & G. Co. 1 ..... dry
13-6n-2w Ball, Rio Puerto Oil Co. 1 .. dry
5-6n-2w Harlan Ranch, Harlan et al 1 ..... abd

Wells completed	28
Production	197,724
Dry and abandoned	4

MONTANA

WELLS COMPLETED

26-35- 2 Abell, California Co. 2 ..... dry
16-34- 2 Shaver, California Co. 2 ..... dry
20-34- 1 Adams, Dakota-Montana 2 ... gas
10-35- 2 Bruins, Tom Davis Synd. 12 .. 35
33-35- 2 McCormick, Diamond Oil Co. 16 dry
29-35- 2 Jarrett, "56" Pet. Corp. 13 ... dry
19-35- 1 Kal-Kevin, Larsen & White 8. 21
29-35- 2 Zimmerman, Minnesota Pet. Co. 7 ..... dry
28-35- 1 Levnick, Monopeg City, Ltd. 1 10
24-33- 2 Frogge, Northern Nat. Gas. Dev. Co. 5 ..... dry
30-35- 1 Byrne, Rice Oil Co. 12 57
25-34- 1 Swan, East Side Oil Co. 1 ... gas
26-36- 2 Abell, Texas Pacific 3 31
36-35- 2 State, Texas Pacific 54 ..... dry
12-37- 4 Buckley, Adnac O. & G., Ltd. 1 dry
2-37- 4 J. Farbo, Ohio Oil Co. 2 .... gas
1-37- 4 Buckley, Huso Bros. 1 ..... dry
12-37- 4 Buckley, Singleton et al 1 ... 60
22-34- 4 Peterson, Vantana Oil, Ltd. 1.. dry
11- 7-21 N. P., Ohio Oil Co. 2 1000
16- 1-33 Lot 3, Big Horn Gas Co. 16 .. gas
10- 9-56 Gas Dev. Co. 56 ..... gas
32-11-58 J. I. Creel 1 ..... dry
22- 8-59 Capitol Gas Corp. 1-3 ..... gas
18- 7-60 J. I. Creel 2 ..... gas
1-32- 7 Johnson, Square Deal Pet. 1.. dry
17-25-20 Gas Dev. Co. 701 ..... dry
11-25- 1 Martin, "56" Pet. Corp. 3 .... dry

Completions	28
Production	1184
Dry	14
Gas	7

EASTERN FIELDS

Summary of Completed Work

Fields—	Comp.	Prod.	Dry	Gas
Allegany	14	17	1	1
Bradford	55	49	0	0
Venango-Clarion	10	3	5	2
Middle Field	1	1	0	0
Butler-Armstrong	5	4	2	1
SW. Pennsylvania	11	50	3	6
West Virginia	87	229	16	47
Southeast Ohio	56	1,027	30	6
Total Sept.	239	1,380	47	63
Total Aug.	265	1,185	33	63
Difference	26	195	14	0

Summary of Work Under Way

	Rigs	Drlg.	Ttl.
Allegany	0	7	7
Bradford	6	17	23
Venango-Clarion	0	11	11
Middle Field	0	1	1
Butler-Armstrong	3	7	10
SW. Pennsylvania	2	17	19
West Virginia	18	87	105
Southeast Ohio	22	76	98
Total Sept.	51	223	274
Total Aug.	63	199	262
Difference	12	24	12

WELLS COMPLETED

BRADFORD

Forest Oil Corp. 12 12
Forest Oil Corp. 4 ..... pressure
Forest Pet. Corp. 1
Forest Petroleum Corp. ..... pressure
Niagara Oil Corp. 5 5
Niagara Oil Corp. ..... pressure
Niagara Oil Corp. ..... pressure
Niagara Oil Corp. ..... pressure
Forest Development Corp. 1
Demcey Oil, William Finley 2
Razy, Kauffman and Lawrence 1
Fee, Wellrock Prod. Co. et al ..... pressure
Fee, Wellrock Prod. Co. et al ..... pressure
Fee, Wellrock Prod. Co. et al 1
Fee, G. W. Crooks estate 5
Fee, G. W. Crooks estate 4
Quintuple, Lou Potter Mulhaupt 1
Farm 4,053, South Penn Oil Co. 5 5
Fee, Olean Petroleum Co. ..... pressure
Fee, Olean Petroleum Co. ..... pressure
Kinley Oil, H. J. Walter ..... pressure
Kinley Oil, H. J. Walter 1
Mack, Walter and Passmore 1
Fee, Kate Schoonover 1
Whipple, W. C. Middlebrough et al 1
Melvin, South Penn Oil Co. 1
Bucher, Sloan and Zook ..... pressure
Quintuple, Healey Pet. Corp. ..... pressure
Quintuple, Healey Pet. Corp. ..... pressure
Bennett, Bradford Prod. Co. 3
Franchot, J. A. Madden 1
Clark, W. H. Emery 1
Fee, Hyde and Beck 1

Wells completed	55
Production	49
Pressure	16

VENANGO-CLARION

Myers, Mrs. Addie Myers ..... dry
Oaks, Shaffer Oil Co. 1 ..... dry
Matthews, Plum Oil Gas Co. 7 ..... dry
Matthews, Plum Oil Gas Co. 8 ..... dry
Manley, Glass and Highfield 28 1
Meherten, F. C. Deemer 31 1
Reckenbrode, Fryburg Motor Co. 1 .... gas
Wilbert, Carrie W. Tracy 1 1
Courtney, Edenburg Oil & Gas No. 2.... gas
Myers, G. P. Myers 24 ..... dry

Wells completed	10
Production	3
Dry	5
Gas	2

ALLEGANY

Fee, Mary Lippert 4
Fee, F. H. Stephan 1
Fee, Arthur and Elizabeth Atwood .. 1
Fee, Arthur and Elizabeth Atwood .. 1
Homer, Frank Homer 1
Fee, M. J. Ball et al 1
Fee, Crow Farm Oil Co. ..... pressure
Fee, Curtis and Dunlavey 3
Forest Oil Corp. 1
Champlin, Dusenbury et al ..... gas
Bowler, Swarthout et al 1
Fee, E. M. Barnes et al 1
Fee, O. L. Hatch et al 3
Fairbanks, P. F. Shaner ..... dry

Wells completed	14
Production	17
Dry	1
Gas	1
Pressure	1

MIDDLE FIELD

Smith, McCool Bros. 1

BUTLER-ARMSTRONG

Marshall, G. K. and H. L. Marshall 4.. 3
Black, Rabbit and Hildebrand 1 1
McDonald, B. F. McDonald 1 ..... dry
Henry, T. W. Phillips G. & O. Co. 1.... gas
Brown, Ellenberger & Stroup 1 ..... dry

Wells completed	5
Production	4
Dry	2
Gas	1

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED

WASHINGTON COUNTY

Forney, W. J. Cushing & Co. 1 ..... gas
Dague, Duquesne Gas Corp. 1 15
Whitehill, M. P. Whitehill & Co. 4 .... gas

ALLEGHENY COUNTY

Campbell, Chemical O. & G. Co. 1 35
Clark, Chartiers Oil Co. 1 ..... gas

BEAVER COUNTY

Atens heirs, George Freshwater 1 ..... dry

GREENE COUNTY

Williamson, Union Gasoline & Oil Corp. 1 ..... dry
Maples, J. T. Ingram & Co. 1 ..... gas
Lemley, J. B. Nuss et al 1 ..... gas
Coen, H. D. Freeland et al 1 ..... gas
Clovis, Duquesne Gas Corp. 1 ..... dry

WEST VIRGINIA

WELLS COMPLETED

MARION COUNTY

Toothman, Owens Illinois Glass Co. 1 .. gas
Price, Victor Tennant 1 ..... gas
Scott & Smith, Island Gas Co. 1 ..... gas
Snyder, Philadelphia Natl. Gas Co. 1 .. dry
Quincy Coal Co., Godfrey L. Cabot 21 .. gas
Toothman, Owens Illinois Glass Co. 2 .. gas

MONONGALIA COUNTY

Thomas, Mfrs. L. & H. Co. 3 5
Shriver, H. L. and C. S. Luton 1 5
Bean, Pgh. & W. Va. Gas Co. 5,385 .... gas

TYLER AND WETZEL COUNTIES

McCullough, A. S. McCullough 1 ..... dry
Snodgrass, Nuil & Moorhead 3 ..... gas
Pethtel, Union G. & O. Co. 1 ..... gas

HANCOCK COUNTY

McIntosh heirs, John J. McIntosh 3 ... dry
Brenneman, R. J. Braden 44 7

DODDRIDGE COUNTY

Maxwell, Columbian Carbon Co. 85 .... gas
Maxwell, Carnegie Natl. Gas Co. 30 ... gas
Pitts, Lucas & Mawhinney 1 ..... gas

RITCHIE COUNTY

Foutty, J. G. Charter 6 5
Wilson, E. E. Pope 8 3
Moore, P. N. Rinehart 3 10

CLAY COUNTY

Brown, Swan & Goshorn, Virginian G. & O. Co. 27 50
Brown, Swan & Goshorn, Virginian G. & O. Co. 28 20

GILMER COUNTY

Drain, Pgh. & W. Va. Gas Co. 1 ..... gas
Matheny, Carnegie Natl. Gas Co. 6 .... gas
Snider, Middletown Natl. Gas Co. 2 5
Moore & Miller, A. E. Ellis et al 1 .... dry
Mitchell, Park Bowser 4 ..... gas
Lynch, Mud Lick O. & G. Co. 1 ..... gas

WIRT COUNTY

Lewis, Federal O. & G. Co. 1 ..... dry
Wine, Hart et al 1 ..... dry

JACKSON COUNTY

McCarty, South Penn Oil Co. 13 25
Gray, Capitol City O. & G. Co. 2 7

WOOD COUNTY

Hively, C. C. McKinley & Co. 1 1
Athey, Stewart & Sweeny 1 5
Athey, Stewart & Athey 5 5

MASON COUNTY

Newton, Berea O. & G. Co. 1 ..... gas
Newton, Berea O. & G. Co. 2 1

ROANE COUNTY

Taylor, Ohio Valley Gas Corp. 1 ..... gas
Nestor, Godfrey L. Cabot 1 ..... dry
Starcher, F. F. McIntosh 1 ..... dry
Thorn, Heck Oil Co. 1 1

CALHOUN COUNTY

Knight, Hope Const. & Refg. Co. 1 ... dry
Deems, M. F. Crowley 1 2
Wilson, Hope Const. & Refg. Co. 1 .... dry
Haught, Richter Oil Co. 5 5
Lockney, Earl Goodman et al 1 ..... dry
Stump, L. F. Bickel 11 ..... gas
Wilson, South Eastern Gas Co. 1 ..... gas
Starcher, Godfrey L. Cabot 1 ..... dry
Hamilton & Hunt, F. F. McIntosh 2 .... gas
McCoy, South Eastern Gas Co. 4 ..... gas

PUTNAM COUNTY

Byrnside, Larner Gas Co. 1 ..... gas
McCallister, J. V. Rashman 1 ..... gas

BOONE COUNTY

Sutphin, Pure Oil Co. 3 ..... gas
Nelson L. & O. Co., G. L. Cabot 7 ..... gas
Federal Coal Co., G. L. Cabot 28 ..... gas
Federal Coal Co., G. L. Cabot 21 ..... gas
Federal Coal Co., G. L. Cabot 39 ..... gas
L. R. & P. Tract, Pure Oil Co. 41 10
Miller heirs, Southern Gas Co. 3 ..... gas

KANAWHA COUNTY

Ball, Cameron O. & G. Co. 1 ..... gas
Young, Buff Lick O. & G. Co. 1 3
Williams Coal Co., Pure Oil Co. 252 5
Williams Coal Co., Pure Oil Co. 253 15
Winifrede Co., Winifrede Co. 1 ..... gas
Kendall, Kendall O. & G. Co. 1 ..... gas

CABELL COUNTY

Hanley, W. H. Kirtley & Co. 1 ..... gas
Morris, Harshbarger O. & G. Co. 1 .... gas
Nixon & McCullough, Larner Gas Co. L-100 ..... gas
Markin, Hamilton Gas Co. F-13 ..... gas
Houchin, Ortman & Shipe 1 ..... dry

LEWIS COUNTY

Shea heirs, McCall Drilling Co. 1 .... gas
Cathers, Hope Const. & Refg. Co. 7,491 4
Allman, Moran Drilling Co. 1 ..... gas

PLEASANTS COUNTY

Reed, Hinds Peevey 1 ..... dry

BRAXTON COUNTY

Bennett, Philadelphia Nat. Gas Co. 1.. dry

MINGO COUNTY

Messer, Wm. P. Floyd 2 28
Wilcox, United Fuel Gas Co. 4,265 .... gas
Cotiga Dev. Co., United Fuel Gas Co. 4,240 ..... dry

WAYNE COUNTY

Endicott, Ohio Southern Gas Co. 1 .... gas
Adkins, C. C. Wolfe 1 ..... gas

LINCOLN COUNTY

Adkins, Woodyal Gas Co. 1 ..... gas
Stowers, Woodyal Gas Co. 2 ..... gas
Dotson, United Fuel Gas Co. 1 ..... gas
Adkins, Conley Gas Co. 1 ..... gas
Reynolds, L. R. Sweetland 1 ..... gas
Lucas, Allegheny Gas Corp. 1 ..... gas

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ashland	13	38	6	4	5	16	21
Medina	11	78	1	3	3	9	12
Lorain	6	0	1	5	2	7	9
Wayne	2	0	1	1	2	8	10
Holmes	5	19	1	3	1	5	6
Ashtabula	2	0	2	0	0	2	2
Richland	0	0	0	0	1	5	6
Knox	7	80	4	2	4	6	10
Coshocton	3	3	0	3	0	3	3
Summitt	3	0	1	2	1	9	10
Licking	10	283	3	1	5	12	17
Muskingum	4	237	1	1	6	34	40
Athens	10	1	1	8	5	15	20
Lawrence	0	0	0	0	2	3	5
Tuscarawas	1	0	0	1	2	7	9
Stark	3	0	0	3	1	4	5
Fairfield	2	0	2	0	0	1	1
Guernsey	1	25	0	0	3	12	15
Belmont	3	3	0	1	0	6	6
Gallia	0	0	0	0	0	1	1
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Delaware	1	0	1	0	0	0	0
Total Sept.	85	767	24	35	43	158	201
Total Aug.	112	1,172	35	45	55	143	198
Difference	27	405	11	10	12	15	3

WELLS COMPLETED

ASHLAND COUNTY

Jackson—G. A. Keemer, Ohio Fuel Gas 1-5,203 ..... dry
Jess Howell, Ohio Fuel Gas 1-5,222.. gas
Wade Welch, Ohio Fuel Gas 1-5,234.. gas
Orange—P. C. Moffett, Ohio Fuel Gas 1-5,223 ..... gas
W. R. Gardner, Ohio Fuel Gas 1-5,031 dry
Mohican—Henry Smith, Blair & Co. 1. dry
Ferry—C. W. Smalley, Ohio Fuel Gas 1-5,259 ..... gas
Melvin Devault, D'Lano & Co. 2 15
Ed. Barnhart, Coast & Co. 10 20
Lake—C. I. Sellers, Robinson & Co. 2.. 3
Vermillion—D. & B. Hirschler, Robinson & Co. 2 ..... dry
Elsa Sheriff, Robinson & Co. 1 .... dry
Hanover—Wm. Baum, Ohio Fuel Gas 1-5,254 ..... dry

Wells completed	13
Production	38
Dry	6
Gas	4

MEDINA COUNTY

Harriasville—M. S. Payne, Ohio Fuel Gas 2-5,216 ..... gas
Westfield—E. H. Kerr, Ohio Fuel Gas 1-5,246 ..... dry
Hinckley—R. H. Sheehan, Ohio Fuel Gas 1-5,248 ..... gas
York—J. W. Shive, Ohio Fuel Gas 2-4,126 ..... gas
Chatham—Henry Essig, Oko Oil & Gas 39 15
Henry Essig, Oko Oil & Gas 40 20
Henry Essig, Oko Oil & Gas 41 10
T. W. Brinker, Oko Oil & Gas 27 10
T. W. Brinker, Oko Oil & Gas 28 10
J. A. Kruggle, J. R. Kommer 5 5
J. W. Kruggle, J. R. Kommer 6 8

Wells completed	11
Production	78
Dry	1
Gas	3

LORAIN COUNTY

Carlisle—J. Davidson, Ohio Fuel Gas 1-5,272 ..... gas
L. H. Bruce, Ohio Fuel Gas 1-5,271 .. gas
Patrick Banks, Ohio Fuel Gas 1-5,270 dry
Thos. A. Conway, Wiser Oil 1 ..... gas
A. H. Hannaford, Elyria Steel Corp. 1 ..... gas
John B. Wensink, A. F. Keck & Co. 1 gas

Wells completed	6
Dry	1
Gas	5

WAYNE COUNTY

Congress—Clayton Good, Harmon & George 1 ..... abd
Chester—A. E. McAfee, Ohio Fuel Gas 1-5,235 ..... dry

Wm. Lewis, Hulse & Kundtz 1 ..... gas

Wells completed 2
Dry 1
Gas 1
Abandoned 1

HOLMES COUNTY

Hardy—S. H. Sterling, East Ohio Gas 6 11
Monroe—Valentine Close, Ohio Fuel Gas 2-5,250 ..... dry
Chas. Clement, Upham Gas 1 8
Richland—J. L. Phillips, Ohio Fuel Gas 1-5,245 ..... gas
Ripley—J. Alexander, Ohio Fuel Gas 3-3,028 ..... gas

Wells completed 5
Production 19
Dry 1
Gas 2

ASHTABULA COUNTY

Kingsville—W. & J. Rose, Ohio Fuel Gas 1-5,229 ..... dry
Sheffield—John Dunnick, Ohio Fuel Gas 1-5,221 ..... dry

Wells completed 2
Dry 2

KNOX COUNTY

Brown—Thos. E. Doup, Ohio Fuel Gas 2-5,255 ..... gas
Jefferson—Sophia A. Stout, Ohio Fuel Gas 1-5,251 ..... gas
C. H. Sheldon, Bell Bros. 2 ..... dry
Clay—Isaac Miller, Poorman & Co. 4.. dry
Jackson—Emanuel Rine, Preston Oil 2-1,435 80
Union—H. G. Hammond, Harvey G. Hammond 8 ..... dry
Monroe—Wm. Henwood, Upham Gas 1 dry

Wells completed 7
Production 80
Dry 4
Gas 2

COSHOCTON COUNTY

Pike—Perry Ashcraft, McClay Bros. 2 gas
Monroe—C. A. Thompson, Ohio Fuel Gas 1-5,201 ..... gas
Bethlehem—H. J. Adams, Dugan-Sloan Oil & Gas 14 3

Wells completed 3
Production 3
Gas 2

SUMMITT COUNTY

Franklin—Uriah J. Caston, F. A. Brendall & Co. 1 ..... gas
Green—L. T. Poviacs, East Ohio Gas 1 gas
Sam Herring, Eagon & Co. 3 ..... dry

Wells completed 3
Dry 1
Gas 2

LICKING COUNTY

Fallsburg—U. G. Porter, McClay Bros. 2 95
W. G. Booth, Norpell & Co. 2 116
Walter McDonald, Norpell & Co. 3... dry
Howard Ashcraft, Ohio Oil 1-5,241... dry
C. H. Kidd, I. C. Robinson 1 10
Hopewell—O. Hartman, Wehrle Gas 1.. gas
Perry—Ethel Frost, Sterl Brown 6 3
Hanover—H. C. Priest, the Pure Oil 7.. 41
Mary Ann—Dave Wright, Settles Oil 1 16
Wm. Strickler, Armbruster & Stickler 4 2

Wells completed 10
Production 293
Dry 2
Gas 1

MUSKINGUM COUNTY

Jackson—Otis McKee, Pure Oil 3 224
Clay—B. J. Baughman, Wallsmith & Co. 1 13
Newton—W. H. Combs, A. B. Colgan 1 dry
Brush Creek—Mary Dunn, Sagle & Co. 5 ..... gas

Wells completed 4
Production 237
Dry 1
Gas 1

ATHENS COUNTY

Ames—J. T. Fleming, Ohio Fuel Gas 4-5,277 ..... gas
G. L. Fleming, Ohio Fuel Gas 3-5,283 gas
Berne—Flora Fleming, Ohio Fuel Gas 3-5,287 ..... gas
H. D. & C. C. Curtis, Carpenter & Glazer 11 1
Lodi—John R. Ruth, Ohio Fuel Gas 1-5,231 ..... dry
Alexander—F. W. Cooley, Park Bowser & Co. 1 ..... gas
York—Baird Bros. Co., Whitmer & Co. 1 ..... gas
Frank Patton, Noah Andrews & Co. 1 gas
Cannan—Elmer Halbert, Nusun & Co. 2 gas

Wells completed 10
Production 1
Dry 1
Gas 8

TUSCARAWAS COUNTY

Oxford—Howard Hart, Ohio Fuel Gas 1-5,198 ..... gas

STARK COUNTY

Lake—Harry Alexander, East Ohio Gas 1 ..... gas
Perry—Brookside Country Club, Kime & Co. 1 ..... gas

Wells completed 2
Gas 2

FAIRFIELD COUNTY

Walnut—Jacob Kramer, Gas Prod. Co. of Ohio 1 ..... dry
Richland—Jno. A. Kennedy, Patton & Bishop 2 ..... dry

Wells completed 2
Dry 2

GUERNSEY COUNTY

Cambridge—Mahala Johnson, Ohio Fuel Gas 1-5,082 25

BELMONT COUNTY

Somerset—J. T. Skinner, M. Fulton & Co. 1 2
Howell-Dement, M. Fulton & Co. 3 .. gas

Wells completed 2
Production 3
Gas 1

DELAWARE COUNTY

Oxford—Wooly Park, Lee Oil & Gas Co. 1 ..... dry

SOUTHEAST OHIO

WELLS COMPLETED

MONROE COUNTY

Cronin, Shay McMullin Co. 1 5

PERRY COUNTY

Larne, Preston Oil Co. 1 ..... dry
Larzelere, Ohio Fuel Gas Co. 3 ..... dry
Alwine, Ohio Fuel Gas Co. 1 ..... dry

MUSKINGUM COUNTY

Combs, Northern Dev. Co., et al 1 .... dry
Baughman, Walsmith and Webb 1 5
Rusk, H. E. Donahue 2 5
Perry, Hopewell Fuel & Gas Co. 1 60
McKee, Pure Oil Co. 3 235

LICKING COUNTY

Mossholder, I. C. Robinson et al 3 15
Clark, Murphy Petroleum Co. et al 1.. 120
McDonald, Ridgeway et al 1 ..... dry
Booth, Ralph Norpell et al 2 116
Ashcraft, Preston Oil Co. 1 ..... dry
Kidd, I. C. Robinson et al 1 ..... dry
Porter, McClay Bros. et al 1 95
Priest, Pure Oil Co. 6 20
Stasal, Preston Oil Co. 2 ..... dry
Hartman, Wehrle Co. 2 ..... gas
Stricker, Wm. Stricker et al 3 7
Wright, O. H. Griffith 1 10

GUERNSEY COUNTY

Johnson, Preston Oil Co. 1 25
Wilson, Ohio Fuel Gas Co. 5 50
Lanning, Wm. Loring et al 1 ..... dry

ATHENS COUNTY

Patton, Noah Andrews et al 1 ..... gas
Day, Ohio Fuel Gas Co. 1 ..... dry
Cooley, Park Bowers et al 3 ..... gas

VINTON COUNTY

Doss, Hope Const. & Refg. Co. 1 5

COSHOCTON COUNTY

Ashcraft, McClay Bros. et al 2 ..... gas
Adams & Mayers, O. E. Sloan et al 14.. 6

HOLMES COUNTY

Bucy, Ohio Fuel Gas Co. 1 ..... dry
Phillips, Ohio Fuel Gas Co. 1 ..... gas
Sterling, East Ohio Gas Co. 6 5

ASHLAND COUNTY

Sellers, Great Lakes Oil Co. 3 ..... gas
Black, Meltzer & Moore 2 ..... dry

JEFFERSON COUNTY

Blackburn, Richard Graham et al 1.... 10
Dennis, Wm. Graham & Co. 1 ..... dry
Stratton, C. M. Stratton 1 ..... dry

KNOX COUNTY

Rine, Preston Oil Co. 1 90
Sheldon, Bell Bros. 1 ..... dry

NOBLE COUNTY

McMahn, Harper & Clay et al 2 1

MEDINA COUNTY

Essig, Oko O. & G. Co. 40 20
Essig, Oko O. & G. Co. 41 10
Essig, Oko O. & G. Co. 42 30
Brinker, Oko O. & G. Co. 28 10
Brinker, Oko O. & G. Co. 29 ..... dry
Kruggle, J. A. Kommer 6 5

WASHINGTON COUNTY

Lauer, Bay & Weppler 1 50
Hickman, Brookheart et al 1 ..... dry
Leasure, Robt. W. Turney et al 13 .... dry
Steinhoff, John C. Grau 6 5
Cummons, Herlan Schramm et al 14 .. 5

MEIGS COUNTY

DeWolf, Great Bend Oil Co. 1 ..... gas

COLUMBIANA COUNTY

Hartman, W. R. Thompson et al 3 .... dry
Sanor, W. R. Thompson et al 1 ..... dry

MAHONING COUNTY

Cobbs, Natural Gas Co. of W. Va. 1.... 1

BELMONT COUNTY

Dement & Howell, W. C. McBride, Inc. 3 gas
Renker, Fulton et al 1 3

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Clark	0	0	0	0	0	5	5
Cumberland	1	0	1	0	0	0	0
Crawford	4	63	0	0	1	4	5
Lawrence	0	0	0	0	0	3	3
Wabash	1	12	0	0	1	4	5
St. Clair	3	120	1	0	0	11	11
Effingham	0	0	0	0	0	1	1
Randolph	1	0	1	0	0	3	3
Monroe	0	0	0	0	0	2	2
Washington	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
McDonough	1	2	0	0	0	0	0
Marion	0	0	0	0	0	2	2
Total Sept.	11	197	3	0	2	39	41
Total Aug.	16	182	7	0	1	27	28
Difference	5	15	4	0	1	12	13

WELLS COMPLETED

CUMBERLAND COUNTY

Crooked Creek—McFarland, Petroleum Exploration 1 ..... dry

CRAWFORD COUNTY

Prairie—Martin Newlin, Watson & Co. 4 50
Wm. Akeman, O. B. Oil & Gas 7 2
S. D. Akeman No. 2, Gus Lowery & Co. 2 1
Oblong—J. & G. Apple, Niagara Oil Corp. 13 10

Wells completed 4
Production 63

LAWRENCE COUNTY

Dennison—Tholly-Hollister, Associated Prod. 1, 2 ..... abd
Petty—Oris Pepple, Ohio Oil 10 ..... abd
H. D. Rigell No. 1, Ohio Oil 4 ..... abd
Lawrence—R. R. Trueblood, Ohio Oil 1, 2 ..... abd
Milligan-Dickerson, Ohio Oil 1 ..... abd

Abandoned 7

WABASH COUNTY

Wabash—Hattie E. Robinson, Robinson Oil 3 12

ST. CLAIR COUNTY

Sugar Loaf—Phillip Frye, Ohio Oil 10 75
A. J. Shondy, Ohio Oil 2 45
Ralph Keim, Eckert & Co. 1 ..... dry
W. A. Lindemann, Sparks & Poulton 1 abd
Bardelchew & Peel, Felson & Roberts 1 ..... abd
M. Garvey, Felson & Roberts 1 ..... abd
Robt. Randolph No. 2, Clyde Sparks & Co. 1 ..... abd
Robt. Frazier, L. G. Blackman & Co. 1 ..... abd
Edgar Robinson, H. A. Wertz 1 ..... abd
Church lot, H. A. Wertz 1 ..... abd
Otten & Pittman, Knox & Robinson 1, 2 ..... abd
Chas. Welch, F. G. Goodfellow, receiver 1 ..... abd
H. A. Straud, Delaney & Co. 1, 2 .... abd

Wells completed 3
Production 120
Dry 1
Abandoned 12

RANDOLPH COUNTY

Red Bird—Adolph Schreiber, Beck & Butler 1 ..... dry

McDONOUGH COUNTY

Colmar—J. A. Clark, Michigan-Illinois Oil 1 2

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Wood	2	9	0	0	1	0	1
Hancock	3	45	0	1	0	3	3
Allen	0	0	0	0	0	1	1
Auglaize	1	1	0	0	0	0	0
Sandusky	1	0	0	1	0	1	1
Seneca	4	2	2	1	0	6	6
Lucas	0	0	0	0	0	2	2
Ottawa	0	0	0	0	0	2	2
Shelby	1	5	0	0	0	0	0
Hardin	11	0	1	10	1	8	9
Wyandot	2	0	0	2	1	1	2
Erie	0	0	0	0	0	1	1
Total Sept.	25	62	3	15	3	25	28
Total Aug.	16	179	3	5	2	31	33
Difference	9	117	0	10	1	6	5

WELLS COMPLETED

WOOD COUNTY

Montgomery—Ellen Ashley, N. C. & Ella Z. Schroyer 1, 2 ..... abd
N. K. Williams, N. K. Williams 1.. abd
Freedom—H. & J. C. Bruning, R. H. Libbe 2, 3, 4 ..... abd
Troy—Hille & Linke, D. J. Klingman 5 abd
Henry—W. P. Noble, Chidester, Baldwin & Co. 10 4
Lake—S. A. Achenberger, Linday Airway Oil 4 5
Freedom—Gerath Stein, Home Banking Co. 2 ..... abd

Wells completed 2
Production 9
Abandoned 8

HANCOCK COUNTY

Allen—Nathan Taylor, D. B. Bushey 4.. 25
Biglick—R. W. Moore, Robt. Mitchell, trustee 3 20
Delaware—J. M. Long, C. A. & F. J. Peavy 1 ..... gas

Wells completed 3
Production 45
Gas 1

AUGLAIZE COUNTY

Moulton—Gus Kohler, C. Tester & Co. 2 1

SANDUSKY COUNTY

North Washington—F. Leaser, W. C. Richards 1 ..... gas
Scott—Sam Swartz, D. J. Bonawit 1, 2, 3, 4 ..... abd

Wells completed 1
Gas 1
Abandoned 4

VAN WERT COUNTY

York—A. B. Jones, John Ellis 1 ..... abd
Griffith H. Jones, John Ellis 1 ..... abd
Wm. George, John Ellis 1, 2, 3 ..... abd
Evan T. Margan, John Ellis 1 ..... abd
R. O. Evans, John Ellis 1 ..... abd

Abandoned 7

SENECA COUNTY

Jackson—R. E. Harrison, Kansas-Ohio Oil & Gas 3 2
Seneca—C. B. Shireman, Jones & Coyle 1 ..... dry
Hopewell—W. M. Grimes, Donels estate 1 ..... dry
Clinton—H. J. Hile, Long & Co. 1..... gas

Wells completed 4
Production 2
Dry 2
Gas 1

SHELBY COUNTY

Cynthian—J. N. Perin, O'Neal Bros. 1.. 5

HARDIN COUNTY

Pleasants—Traeger heirs, Kemrow Co. 2 gas
LeRoy Dull, Bert Sheldon 1 ..... gas
Minnie Kahler, Chas. Aber 2, 3 .... gas
Minnie Burnison, O. A. Hubtsberger 1 gas
Minnie Ripley, Unknown 1 ..... gas
Blanchard—P. L. Gardner, Neely & Underwood 1 ..... gas
Cessna—C. W. Faulkner, Kemrow Co. 1 gas
Adam Strang, Eagon & White 1 .... gas
C. A. Robinson, Ohio Fuel Gas 4-5,286 gas
Fred Wedertz J. W. O'Neil & Co. 1 dry

Wells completed 11
Dry 1
Gas 10

WYANDOT COUNTY

Richland—Wm. Nicholas, J. S. Gallager 1 ..... gas
Crane—Harrison Feeley, Newcomer & Gregg 1 ..... gas

Wells completed 2
Gas 2

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Muskegon	5	65	3	0	0	2	2
Isabella	21	2,245	4	3	20	32	52
Midland	2	1,375	0	0	0	7	7
Kent	0	0	0	0	1	2	3
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	0	6	6
Mason	0	0	0	0	1	5	6
Manistee	0	0	0	0	0	1	1
Lake	0	0	0	0	0	2	2
Cass	0	0	0	0	0	2	2
Tuscola	0	0	0	0	0	1	1
Bay	0	0	0	0	2	0	2
Clare	1	0	1	0	2	1	3
Newaygo	0	0	0	0	3	8	11
Montcalm	0	0	0	0	1	0	1
Saginaw	0	0	0	0	0	1	1
Emmett	0	0	0	0	0	1	1
Eaton	0	0	0	0	1	1	2
Kalkaska	0	0	0	0	1	1	2
Branch	1	0	1	0	0	0	0
Iosco	0	0	0	0	2	1	3
Missaukee	0	0	0	0	1	0	1
Delta	0	0	0	0	0	1	1
Montmorency	0	0	0	0	1	0	1
Kalamazoo	0	0	0	0	0	1	1
Lenawee	0	0	0	0	0	1	1
Monroe	1	0	1	0	0	1	1
Gratiot	0	0	0	0	4	7	11
Shiawassee	0	0	0	0	1	2	3
Livingston	0	0	0	0	2	1	3
Jackson	0	0	0	0	1	0	1
Sanilac	0	0	0	0	3	0	3
Presque Isle	1	0	1	0	0	0	0
Van Buren	0	0	0	0	0	2	2
Cheboygan	0	0	0	0	0	1	1
Lielanau	0	0	0	0	1	0	1
Allegan	0	0	0	0	1	4	5
Washtenaw	0	0	0	0	0	2	2
Osceola	0	0	0	0	1	1	2
Mecosta	0	0	0	0	0	2	2
Barry	1	0	1	0	0	0	0
St. Clair	0	0	0	0	2	0	2
Wexford	1	0	1	0	0	0	0
Genessee	0	0	0	0	1	0	1
Total Sept.	34	3,685	13	3	53	102	155
Total Aug.	20	1,274	5	2	56	128	184
Difference	14	2,411	8	1	3	26	29

WELLS COMPLETED

MUSKEGON COUNTY

Muskegon—Moch heris, Mid-West Oil 2 25
Louis P. Haight, Lima Oil Corp. 10.. 40
Valek, Valek Oil 1 ..... dry
Laketon—Muskegon Brewery, Jersey Oil 1 ..... dry
Hewitt-Buteau, Neely, Foster & Co. 1 ..... abd
Montague—Wm. Lipka, White River Oil Corp. 5 ..... dry

Wells completed 5
Production 65
Dry 3
Abandoned 1

ISABELLA COUNTY

Chippewa—Mrs. Nora Davis, Dixie Oil 7 370
Grubb, G-Lee-P Oil Co. 3 320
Grubb, G-Lee-P Oil Co. 4 320
McClintic, Leonard Pet. 8 160
Retta Lee, Otsego Oil 3 140
Denver—Wezenski, Ohio Prod. & Ref. 1 200
J. Epple, Ohio Prod. & Ref. 1 170
Chas. R. Smith, Wittmer Prop. trustee 2 200
L. Cole, Gibson-Johnson-Borden, Inc. 2 85
Roberts, E. C. Fiedler 1 25
Elmer Merihew, Gordon Oil 1 160
P. J. Marthey, New York Pet. Royalty 2 25
Henry Wesche, Chartiers Oil 1, 2 .. dry
Isabella—P. Harrison, Mason Drlg. 1.. dry
Broomfield—DePool, Slas Dev. Co. 1.... dry
Willie-Crapo, the Pure Oil 1 ..... gas
Vernon—Carmichael, George Talbot 1. 35
A. W. Lynch, Mellon-Pollock Oil 1.. gas
J. Crowley, Mellon-Pollock Oil 1 .... dry
Geo. S. House, Mellon-Pollock Oil 1 25

Wells completed 21
Production 2245
Dry 4
Gas 3

MIDLAND COUNTY

Greendale—Emmett Scott, Pure Oil 1.. 375
Holmes, Pure Oil 1 1000

Wells completed 2
Production 1375

CLARE COUNTY

Grant—Wm. Bowler, Peninsula Oil 1.. dry

BRANCH COUNTY

Noble—Geo. Teller, Gibson-Johnson-Borden, Inc. 1 ..... dry

PRESQUE ISLE COUNTY

North Allis—Lobdell-Emery, Claud F. Palmer 1 ..... dry

BARRY COUNTY

Barry—Hughes, Muskegon Dev. 1 .... dry

WEXFORD COUNTY

Haring—Chas. R. Smith, Marble-Cowe Oil 1 ..... dry

MONROE COUNTY

Dundee—Lidster, M. J. Morris, trustee 1 ..... dry

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod. Dry	Gas	Rigs	Drlg.	Ttl.
Jay	1	2	0	0	0	3	3
Adams	1	10	0	0	0	1	1
Huntington	1	0	0	1	0	0	0
Gibson	0	0	0	0	0	3	3
Pike	10	47	5	1	0	5	5
Daviess	2	0	1	1	0	2	2
Sullivan	3	0	1	2	0	2	2
Vigo	1	48	0	0	0	3	3
Warrick	1	0	1	0	0	2	2
Spencer	0	0	0	0	1	5	6
Perry	0	0	0	0	1	6	7
Crawford	0	0	0	0	0	2	2
Lagrange	0	0	0	0	0	1	1
Posey	0	0	0	0	0	2	2
Putnam	0	0	0	0	0	1	1
White	0	0	0	0	0	1	1
Marshall	0	0	0	0	1	1	2
Monroe	0	0	0	0	1	0	1
Floyd	1	0	1	0	0	1	1
Randolph	0	0	0	0	0	1	1
Dubois	0	0	0	0	0	1	1
Knox	2	2	1	0	0	2	2
Vandeburg	0	0	0	0	1	0	1
Total Sept.	23	109	10	5	5	45	50
Total Aug.	16	87	8	4	4	45	49
Difference	7	22	2	1	1	0	1

WELLS COMPLETED

JAY COUNTY

Jackson—J. W. Edington, Geo. F. Edington & Co. 3 2
Penn—Davis Bros., Wm. M. Stuart 5... abd

Wells completed 1
Production 2
Abandoned 1

ADAMS COUNTY

Blue Creek—Marion Parr, Geo. S. Lacknett 1 10

HUNTINGTON COUNTY

Huntington—Jacob Buzzard, Two Rivers Oil Corp. 2 ..... gas

GIBSON COUNTY

Washington—M. S. Watkins, Euclid Oil 8 ..... abd
Patoka—John Geiser, Ohio Oil 3 .... abd

Abandoned 2

PIKE COUNTY

Washington—Talliaferro, C. C. Talliaferro, Jr. 2 ..... gas
J. M. Thomas, C. E. Wommer 3 .... dry
J. M. Thomas, H. H. Risher 1 .... dry
Chas. Crow, H. H. Risher 1 ..... dry
D. P. Gray, Ohio Oil 3 ..... abd
J. R. Chew, Ohio Oil & Bement 6.. abd
L. C. Thomas, Ohio Oil & Bement 14 abd
M. S. Watkins, Euclid Oil 8 ..... abd
Logan—G. Stewart, H. C. Darby & Co. 5 ..... dry
A. Atkinson, O. C. Andrews 11 2
Wm. Phillips, Wiser Oil 7 35
M. Ingler No. 2, Blue Bird Oil 5 6
T. D. Phillips, Blue Bird Oil 3 4
H. Atkinson, United Oil Corp. 3 .... abd
Rubert Walton, Chas. L. Diver & Co. 1 ..... abd
Clay—Fred Lindy, Wm. Bell & Co. 4.. dry
Monroe—W. W. Shy, Thos. Flynn 1, 4.. abd
Fred A. Butler, Murphy Oil 4 ..... abd
Patoka—Eliza Martin, Murphy Oil 1 .. abd

Wells completed 10
Production 47
Dry 5
Gas 1
Abandoned 10

DAVIESS COUNTY

Veale—Sylvester Swan, Hartman & Co. 2 ..... dry
Harrison—Ageton, Norris, Patterson & Co. 1 ..... gas

Wells completed 2
Dry 1
Gas 1

SULLIVAN COUNTY

Curry—Alva Martz, Thomas & Ellis 1.. gas
Hamilton—Sam Connor, G. G. Billman & Co. 1 ..... gas
Ross Campbell, Dome Gas 1 ..... dry

Wells completed 3
Dry 1
Gas 2

VIGO COUNTY

Prairie Creek—Robt. Piety, Ohio Oil 1.. 48

WARRICK COUNTY

Hart—H. Schumacker, Indiana Southern Utilities 1 ..... dry

FLOYD COUNTY

Franklin—W. H. Colley, Wood Oil 1 .. dry

KNOX COUNTY

Johnson—Near Decker, Gardner Pet. 1 2
Louis Schultz, Shell Pet. Corp. 1.... dry

Wells completed 2
Production 2
Dry 1

CENTRAL WEST FIELDS

(Continued from Page 67)

tion of the State comes to the front with two nice gas producers rated at 2,000,000 feet each. They are C. C. Talliaferro, Jr.'s No. 4 well, 1,500 feet from the south line and 150 feet from the west line of the Aaron George, SW, Section 30, Washington Township, the gas being found from 1,115-38 feet, the other being C. C. Wommer's No. 2 on the J. C. Shea farm, Section 19, same township, at from 1,135-54 feet, both being close to the old Alford Pool. Blue Bird Oil Co. abandoned No. 2 T. D. Phillips, NE, Section 22, same township. R. J. Rendal and others also abandoned No. 5 J. Chandler farm, Section 15, Logan Township. Near the town of Winslow, in Lockhart Township, same county, Gardner Petroleum Co. drilled a dry hole on the William Fritz, Section 35, at a depth of 1,502 feet.

Lee Petroleum Co.'s No. 1 on the Mort Wilson farm, near Glenndale, in Veale Township, Daviess County, reported with a volume of around 1,500,000 feet of gas. Ross & Hensley drilled a dry hole in No. 2 on the P. Ross farm, near Sandy Hook, Section 32, same township, at 1,300 feet.

Southern Indiana is getting a fair play, and, while the wells are not large, they are comparatively shallow and inexpensive to drill. North of Troy, in Perry County, Hagerdon & Schlacter's test on the Reichardt farm proved dry in the Mississippi lime formation where salt water was encountered. A. F. Glenn and others found Blue Lick water on the John Ramsey farm, Section 18, Tobin Township, same county, and it is a duster. Theodore Seits and others' No. 1 Walter Hafele farm, Section 11, Tobin Township, same county, pumped 8 bbls. from the Jett sand at 140 feet. No. 2, same farm, pumped 12 bbls.; No. 3 pumped 10 bbls., and No. 4 pumped 8 bbls., all at approximately the same depth. Roger E. Kirkwood and others' No. 1 Jones Ward, Section 11, Clark Township, same county, and near the hamlet of Leopold, pumped 4 bbls. initial from the Jones sand at 230 feet.

Rickow & Graf found salt water at 110 feet in the Trenton limestone in a second test on the Martha Adams, Section 29, Monroe Township, Randolph County.

Decatur County is also getting some test work done by the Hoosier Public Utilities Co., who drilled four gas wells recently, three of which are on the Ira Hutchinson farm, and No. 1 on the Leimgruber farm, all being close to Greensburg.

Oaklando Gas & Oil Co. found a small gas well with 125 pounds pressure in a wildcat on the L. C. Pickle farm, Section 27, Lawrence Township, Marion County, at 925 feet. More than two dozen tests are under way in various counties throughout the State and upon most of this development depends the future of Indiana development work the coming year.

Indiana Oil and Gas Report

Compiled by Paul F. Simpson, state gas supervisor, department of conservation, division of geology, by counties:

Daviess County—Hartman & Co. found No. 2 S. Swan, in Section 28, Veale Township, dry at 1,289 feet. Lee Petroleum Co. drilled in the largest gas well yet found in this county on the Mort Wilson farm, south of Glenndale. The capacity is about 1,500,000 feet. Ross & Hensley found No. 2 Percy Ross, in Section 32, Veale Township, near Sandy Hook, dry at 1,300 feet.

Decatur County—Hoosier Public Utilities Co. recently completed its fourth well; three are on the Ira Hutchinson farm, and one on the Leimgruber farm south of Greensburg, all gas producers.

DeKalb County—N. E. Master Oil & Gas Co. is starting a well just south of the county line, west of Ashley, in Smithfield Township. This is on the Conrad farm, near the small producer already found.

Gibson County—Indiana Southwestern Gas Corp. is underreaming on the L. W. Gudgell farm in Section 25, Columbia Township. About 1,000,000 feet of gas was reported from this well at 3,500 feet. Same company is drilling at 1,500 feet on the Riley farm near Sommerville, in Barton Township.

Huntington County—Roanoka Oil & Gas Co. completed a dry test near Roanoka. Two Rivers Oil Corp. found a little oil in No. 2 Jacob Buzzard, south of Huntington, and a third well is being started. A test is to be drilled in Salamoniae Township.

Jay County—A gas well will be drilled in Redkey by W. O. Hoppes.

Knox County—Gardner Petroleum Co. found No. 2 John Emison dry at 1,742 feet.

LaGrange County—A showing of gas and oil was reported in the Dundee sand at 1,260 feet in the Clair Shoup well, drilled by the LaGrange Oil & Gas Co.

LaPorte County—Westville Oil & Gas Co. will start a gas well in New Durham Township.

Marion County—Oaklando Gas & Oil Co. completed a gas well on the L. C. Pickle farm, Section 27, Lawrence Township, at 925 feet. Pressure was 125 pounds.

Perry County—Indiana-Kentucky Gas Corp. is extending its line to Troy. Roger E. Kirkwood and others found a 4-bbl. showing in the Jones sand at 230 feet in the John Ward test in Section 11, near Leopold. The Barlow and Cunningham sands were dry. Charles Dice and others plan a test on the John Glenn farm, west of Gerald, in Tobin Township. Theodore Seitz and others have completed four wells at about 140 feet in the Jett sand on the Walter Hafele farm in Section 11, Tobin Township. No. 1 produced 8 bbls.; No. 2, 12 bbls. and 35,000 feet of gas; No. 3, 10 bbls., and No. 4, 8 bbls. and 100,000 feet of gas. A. F. Glenn and others abandoned their test on the John Ramsey farm in Section 18, Tobin Township, after striking Blue Lick water. Hagerdon & Schlacten struck water in the Mississippi lime in No. 1 Reichardt, north of Troy.

Pike County—V. E. Bolyard and others are drilling at 450 feet in Patoka Township. Gardner Petroleum Co. abandoned its test near Winslow at 1,502 feet. R. J. Rendal and others abandoned No. 5 J. Chandler in Section 15, Logan Township, at 1,070 feet. Doctor Talliaferro completed a fourth gas well on the Aaron George farm in Washington Township, and is down 400 feet in No. 2 M. Ingler, in Section 22, Logan Township. Bell Brothers found No. 4 Fred Lindy, in Section 31, Clay Township, dry at 1,745 feet. No. 4 Charles McAtee, drilled by Cox and others in Section 33, Clay Township, was dry at 1,230 feet. Blue Bird Oil Co. completed a 4-bbl. well at 985 to 1,031 feet, Section 22, Logan Township. This was No. 3 T. D. Phillips. Wiser Oil Co.'s No. 7 on the William Phillips farm, Section 23, Logan Township, started at 35 bbls. from 1,332-56 feet. C. E. Wommer and others' well on the J. C. Shea farm, northwest of the Alfred Pool, in Washington Township, produced 2,000,000 feet from 1,135-54 feet. No. 5 George Stuart, drilled by H. C. Darby Co. in Section 23, Logan Township, was dry at 1,337 feet. C. E. Wommer's No. 3 James Thomas, in Section 30, Washington Township, was dry at 1,185 feet.

Porter County—San Juan Coal & Oil Co. is down 200 feet on the Arthur Hanrahan farm, north of Valpariso.

Randolph County—Rickow & Graf found salt water at 110 feet in the Trenton lime on the Adams farm, Section 29, Monroe Township.

Rush County—Land in this county is being leased by the Lincoln Oil Co., which also has leased in Decatur and Jennings Counties.

Spencer County—The French Oil Co. completed a producer in the Gentryville Pool at about 1,200 feet. R. E. Williams and others, drilling on the Marie Berg farm, in Hupp Township, found the Jett sand dry and are reaming. Hamilton, Atwater Sharpe lost their hole on the Bretz farm west of Rock Hill, and are drilling again after skidding the rig over.

Sullivan County—Dome Gas Co. completed a dry hole at 700 feet on the Ross Campbell lease, in Section 9, Hamilton Township. G. G. Billman and others plugged back No. 1 on the Sam Connor farm, in Section 9, Hamilton Township, to 600 feet, where it is making 110,000 feet of gas. The Alva Martz test, drilled by Thomas & Ellis in Section 32, Curray Township, was plugged back from 2,420 to 600 feet, where it is producing 25,000 feet of gas. Other gas wells are to be drilled in the area. Fred Bays and others have doubled the production in Nos. 1 and 2 Tut Mayfield, both of which were deepened. H. H. Huntsman and others have rigged up for a shallow test on the Chancey Piety farm, north of Graysville, in Turman Township. The Bert Wood test in Section 5, Curry Township, drilled by Thomas & Ellis, is shut down with the tools ready to drill in.

Vandeburg County—A test well is planned north of Evansville.

Vigo County—The Ohio Oil Co. has the No. 2 Robert Piety, Prairie Creek Township, pumping off the beam; initial production was 75 bbls. Same company's No. 1 Mabel Prevo started at about 100 bbls. Siosi Oil Corp. completed the Riggs-Thompson well at 2,222 feet. It started at 60 bbls. Same company is down to the shale in the Joe Thomas well.

Warrick County—Location has been made for a test in Hart Township.

New Orders on Wells

Commencing the first of this month, it is required that the division of geology be notified of the intention to drill at least five days before work is started in any oil, gas or test well in Indiana. Printed forms for sending in this information are ready, and will be sent to anyone requesting them. The pamphlet containing all of the laws pertaining to drilling in Indiana has been revised, and copies will be mailed to those receiving this letter as soon as they are received from the printer.

The division of geology is eager to be of assistance to any persons or companies engaged in recovering the state's natural resources. All information or statistics received are filed, and are available to anyone interested. Some of this information has been published in separate reports, and those may be had free, or at a normal cost.

ILLINOIS

The best completions reported from the Illinois Field was the St. Clair County Oil Co.'s No. 4 well, 1,200 feet from the south line and 68 feet from the west line of the Fred Metler farm, SE, Section 34, Sugar Loaf Township, St. Clair County, with an initial production of 77 bbls. from a crevice from 709 to 720 feet.

In the Robinson Field, Watson and others' test near the southeast corner of the J. Umstodt farm, SW, Section 12, Prairie Township, Crawford County, pumped 20 bbls. the first 24 hours from a total depth of 927 feet. In Southwest Township, same county, the Ohio Oil Co. abandoned No. 5 on the Catherine Wick No. 1 farm, SW, Section 24.

Petro Oil & Gas Co.'s No. 15 well, 700 feet from the north line and 220 feet from the west line of the John Kinsy farm, NW, Section 30, Centralia Township, Marion County, pumped 6 bbls. initial from 780 to 795 feet.

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of August		Eight months ended August	
	1929	1930	1929	1930
Petroleum, crude ..... Bbls.	2,236,243	2,407,479	16,868,782	16,472,718
Petroleum, crude ..... $	3,425,767	3,477,561	23,498,898	22,734,979
Total refined petroleum ..... Bbls.	11,743,552	17,512,203	84,344,509	87,255,641
Total refined petroleum ..... $	44,683,246	42,276,838	332,986,393	321,790,340
Gasoline, naphtha and other light products ..... Bbls.	5,609,965	6,433,969	39,888,641	45,456,064
Gasoline, naphtha and other light products ..... $	24,469,969	25,591,195	178,629,218	186,533,921
Oils, illuminating ..... Bbls.	2,033,538	1,686,641	13,503,762	11,665,676
Oils, illuminating ..... $	8,343,948	6,051,325	57,614,625	45,481,483
Gas and fuel ..... Bbls.	3,177,174	2,563,316	23,384,658	23,058,894
Gas and fuel ..... $	3,224,358	3,091,400	24,420,176	23,811,610
Lubricating ..... Bbls.	913,307	810,788	7,439,271	6,964,434
Lubricating ..... $	8,519,484	7,373,661	70,515,670	64,413,761
Other refined petroleum ..... Bbls.	9,568	12,489	128,177	110,573
Other refined petroleum ..... $	125,487	169,357	1,806,704	1,549,565
Paraffin wax ..... Bbls.	28,110,342	23,694,858	195,135,020	180,012,111
Paraffin wax ..... $	1,094,662	831,720	9,165,788	6,805,252

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of August, 1930

Runs

	Month (bbls.)	Dy.ave. (bbls.)
Prairie P. L. Co.*	3,103,000	100,100
Gulf P. L. Co.	1,373,877	44,302
Texas P. L. Co.	647,390	20,880
Magnolia P. L. Co.	1,376,504	44,413
Empire P. L. Co.	1,821,333	58,753
Cosden P. L. Co.	752,407	24,271
Sinclair P. L. Co.*	3,044,206	98,200
Oklahoma P. L. Co.	3,184,696	102,732
Other lines*	5,456,000	176,000
Total August	20,759,207	669,651
Total July	21,571,630	695,858
Difference	812,423	26,207

Shipments

Prairie P. L. Co.†	5,324,835	171,769
Gulf P. L. Co.	1,338,477	43,177
Texas P. L. Co.	1,406,320	45,365
Magnolia P. L. Co.	1,973,649	63,666
Empire P. L. Co.	2,164,408	69,820
Cosden P. L. Co.	727,772	23,477
Sinclair P. L. Co.†	3,244,253	104,653
Oklahoma P. L. Co.	3,092,998	99,774
Other lines*	4,557,000	147,000
Total August	23,829,712	768,701
Total July	23,592,103	761,035
Difference	237,609	7,666

Stocks

Prairie O. & G. Co.*	37,015,000
Gulf P. L.-Gypsy Oil Co.	8,085,136
The Texas Company	4,245,408
Magnolia Petroleum Co.	5,954,486
Empire P. L. Co.	5,296,159
Mid-Continent Pet. Corp.	3,784,079
Sinclair Crude Oil Pur Co.*	20,414,000
Oklahoma P. L. Co.	3,160,977
Carter Oil Co.	9,564,846
Other lines*	24,754,000
Total August	122,274,011
Total July	123,633,063
Difference	1,359,052

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF AUGUST

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for July and August:

	July, 1930	Aug., 1930
Nat. Transit	339,540.44	115,378.49
S. W. Pa. P. L.	92,523.81	70,719.58
Eureka P. L.	356,585.39	272,439.56
Buckeye P. L. (Macksburg)	371,564.16	320,691.51
Buckeye P. L. (Cleveland)	16,505.56	11,270.77
Buckeye P. L. (Lima, etc.)	105,474.77	91,599.86
Indiana P. L.	4,332.54	3,933.51
Cumberland P. L.	190,812.48	169,133.16
N. Y. Transit	30,601.75	25,399.13
Tide Water P. L.	31,075.50	26,087.39
Pure Oil	266,304.65	255,592.02
Paragon Dev.	12,241.51	
Stoll Oil Ref.	3,568.69	3,500.15
Bradford Trans.	340,930.40	314,490.33
Total	2,156,562.15	1,683,036.75
Daily average	68,921.36	54,291.51

Note—Indian Refining Co. had other receipts of 371,342.40 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, 1930	Aug., 1930
Nat. Transit	446,349.71	479,192.75
S. W. Pa. P. L.	259,734.68	240,390.24
Eureka P. L.	265,119.13	273,684.53
Buckeye P. L. (Macksburg)	205,283.26	160,065.90
Buckeye P. L. (Cleveland)	2,195.10	1,713.66
Buckeye P. L. (Lima, etc.)	1,297,607.97	1,394,277.59
Indiana P. L.	1,364,012.03	1,335,998.03
Cumberland P. L.	254,880.86	205,045.71
Southern P. L.	68,841.69	69,211.54
N. Y. Transit	171,500.30	173,920.08
Northern P. L.	182,471.98	125,321.25
Tide Water P. L.	340,106.72	504,721.54
Pure Oil	114,748.17	107,492.59
Paragon Ref.	114,485.64	
Indian Ref.	393,575.63	375,829.23
Paragon Dev.	12,105.23	
Bradford Trans.	460,403.94	381,474.90
Tuscarora Oil	466,572.46	503,254.26
Total	6,419,941.03	6,370,704.44
Daily average	207,094.88	205,506.59

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of July and August:

	July, 1930	Aug., 1930
Nat. Transit	325,073.45	308,226.58
S. W. Pa. P. L.	480,083.44	490,266.60
Eureka P. L.	1,707,911.42	1,603,479.15
Buckeye P. L. (Macksburg)	750,760.45	694,516.87
Buckeye P. L. (Cleveland)	62,047.96	66,815.01
Buckeye P. L. (Lima, etc.)	5,030,489.35	5,004,631.10
Indiana P. L.	771,951.56	826,606.05
Cumberland P. L.	535,644.30	547,844.28
Southern P. L.	311,660.38	245,676.27
N. Y. Transit	152,450.75	144,696.68
Northern P. L.	338,838.05	416,121.94
Tide Water P. L.	1,193,758.34	1,043,300.56
Pure Oil	349,333.02	507,198.43
Paragon Ref.	20,150.83	
Indian Ref.	165,642.89	161,817.52
Paragon Dev.	5,345.17	
Tuscarora	278,810.90	278,425.17
Bradford Trans.	237,709.63	197,440.63
Total	13,268,562.84	13,047,051.84
Decrease	128,292.62	221,511.00

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of July and August showing gross stocks of the above fields:

	July, 1930	Aug., 1930
Pennsylvania	4,409,262.91	4,044,608.48
Lima	786,701.50	815,257.62
Kentucky	719,649.49	594,501.57
Mid-Continent	6,947,051.84	7,051,195.35
Illinois	67,354.63	44,760.06
Michigan	338,542.42	496,728.56
Total	13,268,562.84	13,047,051.84

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
January	56,209	52,904	51,749	75,907
February	61,298	57,002	51,833	79,256
March	63,247	57,485	54,253	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,548
June	62,757	58,230	58,833	75,430
July	58,674	57,144	66,087	68,921
August	60,870	57,745	66,087	64,291
September	60,285	53,487	67,315	
October	147,080	58,100	76,093	
November	57,275	53,865	74,821	
December	53,089	52,025	74,561	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
January	141,227	146,465	165,721	217,623
February	138,534	167,368	159,387	224,365
March	133,777	158,883	161,474	228,846
April	140,228	172,935	169,737	241,845
May	144,594	180,559	184,281	248,383
June	149,772	183,624	185,404	234,4[illegible]
July	151,850	189,470	194,762	207,0[illegible]
August	138,653	192,853	184,946	205,5[illegible]
September	144,313	194,138	201,214	
October	147,036	176,000	191,367	
November	150,975	176,898	202,743	
December	144,504	173,573	186,257	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
January	12,276,710	7,596,564	12,220,0[illegible]
February	12,180,419	8,738,835	12,991,6[illegible]
March	12,238,725	9,002,058	13,247,21[illegible]
April	11,740,135	8,976,172	13,233,6[illegible]
May	11,602,468	8,903,540	13,052,9[illegible]
June	11,287,678	8,921,275	13,396,[illegible]
July	10,819,331	9,211,595	13,268,5[illegible]
August	10,336,743	9,440,643	13,047,0[illegible]
September	9,660,910	9,443,067	
October	9,229,709	9,441,101	
November	8,366,553	9,868,538	
December	7,539,555	11,253,953	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, August 31	2,004,602.13
Runs from wells	568,554.34
Other receipts	151,461.51
Regular deliveries	319,777.13
Other deliveries	455,556.51

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 26,087.39 bbls. Deliveries were 55,965.34 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1930—	Runs	Deliveries
August	594,642.12	375,742.49
1929—		
February	517,320.17	503,387.7[illegible]
March	728,319.67	586,049.8[illegible]
April	515,374.27	654,297.9[illegible]
May	608,981.60	673,813.8[illegible]
June	568,454.70	818,845.9[illegible]
July	611,106.79	823,159.4[illegible]
August	625,351.99	746,425.6[illegible]
September	582,457.66	669,947.7[illegible]
October	622,302.63	558,558.8[illegible]
November	585,108.75	427,064.4[illegible]
December	548,924.41	489,368.9[illegible]
1930—		
January	542,387.95	498,292.9[illegible]
February	548,416.33	414,536.5[illegible]
March	631,944.49	469,119.5[illegible]
April	536,074.22	509,304.6[illegible]
May	605,147.37	504,069.8[illegible]
June	572,662.57	468,658.5[illegible]
July	604,529.54	388,454.4[illegible]

Tide Water Pipe Co., Ltd., also delivered in August 175,346.18 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	19,433	.....	31,334	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167
October	3,065	4,677	42,065	12,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,961	.....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,270
January	18,484	1,936	34,257	22,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774
February	7,678	.....	24,714	14,321	5,000	51,714	.....	.....	.....	.....	2,607	54,321
March	10,548	3,065	28,871	8,774	22,484	73,742	.....	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,432	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	8,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	8,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	42,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,418	3,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300
October	39,936	10,519	137,096	38,160	38,644	264,355	6,613	13,388	11,064	4,419	35,484	299,839
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	33,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	10,678	134,581	38,677	43,806	248,903	4,322	6,453	.....	548	11,323	260,226
February	34,500	14,714	147,357	36,036	29,786	262,933	2,821	11,072	3,500	1,964	19,357	281,750
March	23,355	3,839	151,806	36,645	34,903	255,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	5,933	123,500	40,433	19,434	223,700	.....	7,400	3,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	275,161	5,194	11,548	3,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
September:	Month	26,104,264	21,299,490	26,067,065	3,780,690	1,959,720	1,718,250	2,347,020	4,075,000	87,351,499
	Daily average	870,142	709,983	868,902	126,023	65,324	57,275	78,234	135,917	2,911,716
October:	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,282
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,798	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,823	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	813,394	114,486	61,841	60,592	76,734	134,455	2,622,568
January:	Month	21,983,242	20,802,984	25,384,352	3,273,197	1,817,685	1,780,969	2,151,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,888
February:	Month	20,885,660	17,977,624	23,314,637	2,965,704	1,608,376	1,738,425	2,027,984	3,780,000	74,298,410
	Daily average	745,916	642,058	832,668	105,918	57,442	62,087	72,429	135,000	2,653,515
March:	Month	19,699,979	19,112,306	25,503,880	3,504,395	1,817,871	1,943,093	2,237,028	4,231,500	78,149,252
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,943
April:	Month	18,768,743	19,541,310	24,799,768	3,734,253	1,724,460	1,909,552	2,334,810	4,134,000	76,946,896
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,837
May:	Month	19,044,444	20,587,503	26,214,068	3,978,385	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,592,445
June:	Month	18,020,795	19,754,900	25,643,705	3,765,060	1,704,060	1,923,621	2,519,190	3,880,000	77,211,331
	Daily average	600,693	658,490	854,791	125,503	56,802	64,187	83,973	129,300	2,573,711
July:	Month	18,802,024	18,032,514	25,310,929	3,541,409	1,713,630	2,079,763	3,275,894	3,844,000	77,200,219
	Daily average	606,517	581,694	816,835	114,239	55,280	67,089	105,674	124,000	2,490,329
August:	Month	18,770,466	17,355,034	25,538,513	3,491,536	1,700,102	2,151,120	3,193,341	3,417,000	75,517,106
	Daily average	605,499	556,514	823,823	112,630	54,842	69,391	103,011	110,226	2,436,036
Total 12 months		251,997,871	234,471,947	305,194,440	42,443,717	21,534,067	22,847,332	29,873,392	48,658,600	957,021,067